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# MISS PICKERELL GOES UNDERSEA

*by Ellen MacGregor*

*Illustrated by Paul Galdone*

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To the sweet memory  
of Helen Graham Leming

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*All characters in this book are entirely fictitious.*

MISS PICKERELL GOES UNDERSEA

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# CHAPTER ONE

## Miss Pickerell and Her Cow

Miss Pickerell stopped her automobile in front of the Square Toe City Picture Show, and leaned out to look at a large colored poster beside the ticket window.

The poster showed a sunken ship beneath the surface of the sea.

Several swimmers with rubber fins on their feet and air tanks strapped to their backs were floating through the water, exploring the wreck. In the background hovered a huge submarine.

Miss Pickerell pushed in a loose hairpin, straightened her hat, and got out of her automobile.

"How many, please, Miss Pickerell?" It was the man in the ticket window. His name was Mr. Thread, and he owned the Picture Show.

Miss Pickerell stepped up to the window and put her mouth opposite the little round hole in the glass.

"I'm not going to the show, Mr. Thread," she said. "I don't care much for undersea adventure pictures. They're too improbable."

"The matinee is about to begin," Mr. Thread said. "I'm sure you'd enjoy it. It's very exciting."

"I don't think so," Miss Pickerell said. "I know things like that don't really happen. And anyway, I just wanted to find out if this show is going to be on next week. My seven nieces and nephews are coming to visit me next week, and I'm trying to think of nice things for them to do while they're here."

"It'll be on next week," Mr. Thread said.

Miss Pickerell thanked Mr. Thread and went back to her automobile.

Her next errand was at the Square Toe City Photograph Studio, and she parked her car in the shade of a tree in front of it.

"I'll only be a minute," she said, as she reached into the back seat and took out a large gilt picture frame she had brought with her. "I'll be right back."

Miss Pickerell was speaking to her cow, who was riding in the little red trailer attached to the back of her automobile. Miss Pickerell was very fond of her cow. She always liked to take her cow with her when she went places.

She crossed the sidewalk and opened the door of the photograph studio.

Inside, Miss Pickerell put the gilt picture frame on a desk in the corner and closed the door behind her. A little bell attached to the top of the door tinkled, but for a moment there was no other sound.

This was the photographer's office, a small room with a number of pictures mounted on the wall. A curtained doorway separated the office from the photographer's working quarters. Miss Pickerell could smell the faint stinging smell of the chemicals the photographer used in his darkroom.

With a sudden swish, the curtain across the doorway was pushed aside, and the photographer appeared. He had gray hair and wore glasses.

"Good gracious!" he said, as he went around behind the desk. "It's Miss Pickerell!"

"I don't know why you should be so surprised," Miss Pickerell said. "I told you I might come back if I decided—"

"Was there something wrong with the picture I took of your cow last week?" the photographer asked.

"Not at all," Miss Pickerell said. "In fact—"

"Personally," said the photographer, "I thought it was excellent. Particularly the expression in her eyes."

"I agree with you," Miss Pickerell said. "That's why—"

"Most people are very well pleased with my work," said the photographer. "Most people think I'm such a good photographer that they ask me to take more pictures. Instead of coming back and complaining."

"I'm *not* complaining," Miss Pickerell said. "If you'd just—"

"However," said the photographer, "if you're not satisfied—"

"I'm perfectly satisfied," Miss Pickerell said. "I wouldn't be here if I weren't. The reason I came was—"

"It's unfortunate," the photographer said. He was leaning down turning the pages of his appointment book that was on his desk beside the telephone.

"It might be several weeks before I could take her picture over again. Why don't you reconsider, Miss Pickerell? It's really an excellent picture of your cow. It brings out her personality. I'm even going to put it in my display window to show what a good photographer I am—if you have no objections."

Miss Pickerell stepped up to the desk and stood directly in front of the photographer.

"May I ask you a personal question?" she asked.

The photographer looked up from his appointment book. "Certainly," he said.

"Is there something the matter with you? Is there something on your mind? Is something worrying you?"

The photographer opened his eyes quite wide and stared at Miss Pickerell.

"Why, yes!" he said. "There is! But I don't know how you could tell, Miss Pickerell."

"It's quite simple," said Miss Pickerell. "You haven't been paying attention to a single thing I've said."

The photographer closed his eyes and sighed heavily.

"It's about my son," he said.

Miss Pickerell started to ask him if he wanted to tell her what there was about his son that was worrying him, because she knew that sometimes things don't seem so bad if someone lets you talk about them. But then she remembered her cow, outside in the trailer. She didn't want to keep her cow waiting.

"I've been trying to tell you," Miss Pickerell said, "that I *like* the picture you took of my cow last week. I like it very much. I like it so much that I've decided to have you make an enlargement so I can have it framed and hang it on my living-room wall, right above where my rock collection is going to be when I get it back from Europe."

"Back from Europe?" The photographer seemed to have heard her this time, even though his eyes were still closed.

"It was the governor's idea," Miss Pickerell said. "After my collection of red rocks from Mars won the special gold medal at the state fair, the governor thought it would be nice if I allowed the collection to be exhibited in Europe, so that people there could see it too. The governor made all the arrangements. The exhibition in Europe is over now, and the governor is going to call and tell me just as soon as he finds out when my collection will arrive back in this country."

The photographer had opened his eyes again. He was staring down at the gilt picture frame Miss Pickerell had put on his desk.

"If you're wondering about that picture frame," Miss Pickerell said, "I brought it with me, so you could tell how big to make the enlargement of my cow's picture."

The photographer lifted the frame in both hands.

"Good gracious!" he said. "Look at this beautiful gilt picture frame! I wonder where it came from."

Miss Pickerell felt the muscles around her mouth grow tight with annoyance.

"It's plain to be seen," she said stiffly, "that there's no use trying to transact any business with you today."

She turned toward the door.

"I'll come back sometime when you don't have so much on your mind—when you can pay attention to what people are trying to tell you."

"Perhaps that would be better," the photographer said.

Miss Pickerell pulled the door open so angrily that the little bell on the top of it jangled shrilly.

"Oh, just a minute, Miss Pickerell!" the photographer said, coming out from behind his desk. "I've just had a wonderful idea. Why don't you let me make an enlargement of the picture I took of your cow? Then you could have it framed and hang it on your living-room wall, right above where your rock collection is going to be when you get it back from Europe."

Miss Pickerell stopped with her hand on the door. She took a very deep breath, and she made herself count to ten, very slowly. Then she turned around.

"That's a very good idea," she said. "I can't imagine how you ever happened to think of it! How soon will the picture be ready?"

"It will be ready by Thursday afternoon," the photographer said. "The only thing is, I won't be here."

"When *will* you be here?" Miss Pickerell asked. "When *can* I get it?"

"Thursday afternoon is when I take my swimming lesson," said the photographer. "I could ask my son to give you the enlargement Thursday afternoon. Except that my son won't be here either. About what size would you like the enlargement to be, Miss Pickerell? Personally, I think the same size as this gilt picture frame would be nice."

"I don't suppose," said Miss Pickerell, "that it would do any good to tell you again that that frame belongs to me! I brought it with me when I came in just now, so you could tell what size to make the picture."

"Is that a fact!" said the photographer. "I'll get right to work on the enlargement, Miss Pickerell. It's too bad my son isn't here so he could give it to you while I'm taking my swimming lesson. That's my son's picture." He pointed to a large picture on the wall. "I took that the last time he was home. He's in the Navy."

Miss Pickerell was much more interested in getting back to her cow, who had been quietly waiting in her trailer all this time, than she was in looking at the picture of the photographer's son. But she didn't think it would be polite to say so.

She walked across and looked at the picture.

"My son's name is Covington," said the photographer.

The picture was of a cheerful young man running across a field with a stick in his hand and a large dog beside him.

Miss Pickerell said, "I notice the dog is jumping over that stick in your son's hand. Did your son train him to do that?"

"Training animals to do tricks is Covington's hobby," the photographer said. "The only time Covington gets a chance to use his hobby, now that he's in the Navy, is when he gets a vacation."

"I'm sorry your son isn't home," Miss Pickerell said. "If he were, maybe he'd let me bring my nieces and nephews to watch him teaching his animals to do tricks. My nieces and nephews are coming to visit me next week—all seven of them. I've been trying to think of things they'd like to do."

"Covington likes his hobby," the photographer said, "because he can move around and stretch his muscles. Covington doesn't get a chance to do that very much, except when he has a vacation from the Navy."

Miss Pickerell wondered what kind of job Covington had that would keep him from moving around very much and stretching his muscles.

She looked more closely at the picture.

"What makes your son so pale?" she asked. "I should think anybody in the Navy would get lots of fresh air and sun out there in the middle of the ocean all the time."

But the photographer had stopped listening to her again. He was measuring the gilt picture frame and writing the size down on a piece of paper.

"About the enlargement," he said. "Would you prefer the full figure of your cow, Miss Pickerell? Or just the face?"

Miss Pickerell stepped back to the photographer's desk.

"Just the face," she said. "Can I get the enlargement Friday?"

"What worries me about Covington—" the photographer said. "Oh, excuse me, Miss Pickerell. That's my telephone ringing."

"Maybe it's for me," Miss Pickerell said, as the photographer picked up the phone on his desk. "I left word with the telephone operator that I'd be here, in case the governor called by long-distance to tell me how soon my rock collection is going to get back from Europe."

The photographer answered the phone. Then he looked at Miss Pickerell.

"Good gracious!" he said. "It's a long-distance call for you, Miss Pickerell. I wonder how the operator knew you were here!"



## CHAPTER TWO

### The Governor Has Bad News

"Hello, Miss Pickerell." It was the governor's voice. "Can you hear me?"

"Yes, Governor," Miss Pickerell said.

"I'm afraid I have some rather disturbing news, Miss Pickerell. I hope you won't be too upset."

"You mean there's been a delay?" Miss Pickerell asked. "You mean it's going to take longer than we thought to get my rock collection back from Europe?"

"It isn't that," said the governor. "Not exactly."

"When *will* I get it?" Miss Pickerell asked. "When *are* they going to send it?"

"Well—" the governor said, and Miss Pickerell heard him clear his throat somewhat nervously. "As a matter of fact, Miss Pickerell, the collection has already left Europe."

"Did they put it on the wrong ship?" Miss Pickerell asked. "Did it go to the wrong place?"

"It was the right ship," the governor said. "It was the *S.S. Liberty Bell*. The only trouble is—"

"Governor," Miss Pickerell said, "if you're worried because you can't go to the seaport and take charge of my rock collection when it arrives, the way you said you would, I can go instead. My nieces and nephews are coming to visit me next week, but I'm sure they'd be willing to change their plans if I asked them. If that's all that's worrying you—"

"Miss Pickerell," the governor said, and his voice sounded so weak Miss Pickerell had to ask him to speak a little louder. "I might as well come right out and tell you. There was a severe storm at sea, and the *S.S. Liberty Bell* was badly crippled. Although she was driven far off her course, she managed to make her way to shore. She reached a place called Cliffside Bay. They were able to get all the lifeboats launched. Everybody on board was saved. But the ship herself—"

"Oh, Governor!" Miss Pickerell said. "How terrible! You mean the ship went down?"

"I hated to have to tell you this, Miss Pickerell. But I thought you'd want to know."

"Well, of course," Miss Pickerell said.

Then she thought of something.

She said, "I feel awfully sorry for people that had the kind of cargo that would be damaged by water. I don't suppose being under water hurt my rocks any. Did it take very long to salvage the cargo? And where is my rock collection now?"

"It's still there," the governor said.

"At that place you mentioned? That place where the ship went down?"

"The name of the place is Cliffside Bay," the governor said, "and I believe the Navy uses part of it. What I meant was, the cargo's still on the ship."

"Still on the ship!" Miss Pickerell exclaimed. "Why, what's the matter with the ship's owners? Why don't they get started?"

"It takes a little while to get salvage operations started after a shipwreck. Besides, maybe nobody would want to salvage the ship."

"Why wouldn't they want to?" Miss Pickerell asked. "What kind of owners are they!"

"The owners aren't exactly the owners any more," the governor said. "If an insurance company paid them for the cargo, then the cargo would belong to the insurance company when it was salvaged."

"What's insurance got to do with it?" Miss Pickerell said. "I think you must be mistaken, Governor."

"I checked the whole matter very carefully, Miss Pickerell. I was away when it happened, but as soon as I got back and found out about it, I checked. The ship and the cargo were both insured against just such a catastrophe. And I'm very happy to be able to tell you that your rock collection was very heavily insured."

"Insured!" Miss Pickerell said. "Why, that doesn't do any good! My collection of red rocks from Mars is *priceless*."

"I know how you feel, Miss Pickerell," the governor said. "And I'm extremely sorry. Besides that I feel responsible. So I'm going to do everything I can. It may be that some private salvage company will become interested in salvaging the ship, in order to receive the salvage award. In that case, we might be able to buy back your rock collection from the insurance company."

"Buy it back!" Miss Pickerell exclaimed. "Why, it's mine!"

"Not according to the laws of salvage, Miss Pickerell. And the insurance company might have to sell part of the cargo, in order to pay the salvage award."

"Do you mean to tell me," said Miss Pickerell, "that just any person could salvage the cargo, and that my rock collection might be sold in order to pay him?"

"If he were the first to take possession of the cargo," the governor said. "It isn't very likely though that anybody would bother, unless the rest of the cargo proved to be valuable."

"And the insurance company could sell my rock collection to anybody who wanted it?"

"That's true, Miss Pickerell. However, I'm sure they would be willing to let us have first chance at it, if they understood the situation. It seems to me that, for the time being, there isn't much we can do, though, except wait and see if someone does salv—"

"You don't need to think for one minute, Governor," Miss Pickerell said, "that I'm going to sit around and just wait while my beautiful red rock collection lies at the bottom of the ocean! I'm going to do something about it. I don't know what—but I'm going to do *something*!"

She said good-by, put the telephone back on the desk, and asked the photographer, "Do you know where there's a place called Cliffside Bay?"

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# CHAPTER THREE

## Covington's Hobby

The photographer opened his eyes very wide.

"Good gracious!" he said. "How did you know, Miss Pickerell!"

"Know what?"

"Cliffside Bay is where my son is," said the photographer. "The Navy uses part of Cliffside Bay. Cliffside Bay is where Covington is stationed."

"Is it very far away?" Miss Pickerell asked.

"What worries me about Covington," the photographer said, "is his hobby."

Miss Pickerell sighed with annoyance, but she said, "You shouldn't worry about that. It's good for people to have hobbies. Don't you have a hobby? You just said you took swimming lessons. Isn't swimming your hobby?"

"It isn't exactly a hobby," said the photographer. "It's part of my training. I'm training myself to be able to take pictures under the ocean. But I'm afraid I'm going to have to give up my training on account of Covington's hobby."

"I don't understand," said Miss Pickerell.

"It's this way," said the photographer. "Naturally, Covington can't have his trained animals with him in the Navy. Naturally, he wants to keep them till he gets home again. So I'm taking care of them, and I'm very glad to do it. The only thing is that Covington keeps finding new animals that he wants to train when he gets out of the Navy. And every time he does, he buys the animal and sends it home. You wouldn't believe it, Miss Pickerell, if I told you how many animals I have to take care of! And more keep coming all the time. It's a tremendous responsibility. It worries me so much I can hardly concentrate."

"I should think it would!" Miss Pickerell said. "Someone should speak to your son."

"And not only that," said the photographer. "It isn't only the responsibility. It's the uncertainty. Covington very seldom lets me know ahead of time when he's sending an animal."

"That's unreasonable," Miss Pickerell said. "He *ought* to let you know ahead of time."

"Sometimes he can't," said the photographer.

Miss Pickerell said, "He could send you an air-mail special-delivery letter as soon as he buys an animal. Then you would know that the animal was coming."

"Sometimes," said the photographer, "Covington doesn't have time. Sometimes—"

"Oh, of course!" Miss Pickerell said. "For a minute I forgot your son is in the Navy. You mean he might start to write you a letter, but by the time he had finished it, his ship might have gone out into the middle of the ocean?"

"It might have gone," the photographer said. "But not necessarily out into the ocean."

"Why, that's ridiculous!" Miss Pickerell said. "Where else *could* it go? Unless—Oh!" She put her hand to her mouth. "You mean—?"

The photographer nodded his head.

"Yes," he said. "Covington is on a submarine. Covington is a sonarman on an atomic-powered submarine."

"I guess you mean he's a radarman, don't you?" Miss Pickerell said. "Radar detects things when they can't be seen."

"Covington tells me," said the photographer, "that radar doesn't work under water. He says they have to use sound waves

because sound waves can travel through water. That's what sonar stands for. It means sound navigation and ranging. What sonar does, Covington says, is to send out little pings of sound through the water, and whenever the pings strike anything, they are reflected back."

"Like an echo?" Miss Pickerell asked.

"I guess so," the photographer said. "Anyway, Covington says that's how submarines can detect obstructions in the water. The farther away anything is, the longer it takes for the pings to bounce back. And if the pings keep bouncing back faster and faster, it means that the obstruction is getting closer and closer."

Miss Pickerell thought of something. She asked, "What if the obstruction was a sunken ship on the bottom of the ocean?"

"Sonar could detect that, too," the photographer said. "Covington says a good sonarman can even tell what sort of an obstruction has been detected, just by the way the pings sound when they bounce back."

"You know something?" Miss Pickerell said. "I've just had an idea. How long would it take me to get to Cliffside Bay?"

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# CHAPTER FOUR

## A Rescue at Sea

When Miss Pickerell found out how far away Cliffside Bay was, she was more than a little disappointed.

If she drove her automobile, it would be a long, tiresome trip for her cow. And if she went in the airplane which, the photographer said, would take only three hours, she would have to leave her cow behind. It was unheard of for Miss Pickerell to take a trip without her cow. She was far too fond of the animal to leave her in the hands of strangers, or even of neighbors.

What she finally decided to do was to ask her nieces and nephews if they would be willing to change their plans and come for their visit right away, instead of waiting till next week. Her nieces and nephews knew how much Miss Pickerell loved her cow. Miss Pickerell knew she could trust them.

The photographer told her the name of the company that flew airplanes to Cliffside Bay.

He also told her the name of a small hotel on the second floor of a carpenter shop. All the rooms had windows looking out over the bay.

"I used to stay at the carpenter's hotel," he said, "whenever I went to visit Covington. It was when I was staying at the carpenter's hotel, looking out of the window one day, that I got the idea of training myself to take pictures under the ocean. That was before I had so many animals to take care of that I couldn't go anywhere."

Miss Pickerell said, "Somebody certainly ought to speak to your son about that. Would you care to have me—"

"Oh, if you only would!" the photographer said.

As soon as she got home, Miss Pickerell called her nieces and nephews, in the town where they lived, and asked if they would be willing to change their plans and come for their visit right away, instead of waiting to come next week.

Miss Pickerell's oldest niece, who answered the phone, said, "Of course." And they came the next morning on the bus—all seven of them. Miss Pickerell and her cow were there to meet them.

Fortunately, Miss Pickerell's oldest nephew had just become old enough to have a driver's license, and they all drove Miss Pickerell to the airport in her automobile.

"I'll call you up as soon as I get there," Miss Pickerell said to her nieces and nephews, after she had said good-by to her cow, "to see if everything is all right. And after that, I'll call you every two hours."

She told them about the undersea adventure movie that was on at the picture show, and she gave them all money to go to the matinee.

---

In the airplane going to Cliffside Bay, Miss Pickerell had a chance to think things out. As she thought back on it now, Miss Pickerell realized she had been very brusque with the governor.

Miss Pickerell had a great deal of respect for the governor, and under ordinary circumstances, she would never have spoken to him as she had. It was just that her rock collection was so precious to her. And the governor hadn't seemed to think there was anything anybody could do.

Miss Pickerell herself had been able to think of several things to do.

The first, of course, was to find out just where the sunken ship was. And she thought she knew a very good way to do that.

Miss Pickerell was glad, of course, that she had let the photographer talk so long, because it seemed to relieve him to

talk about his worries. But she was glad, too, because otherwise she might not have found out about sonar, and how sonar-men could detect obstructions under the water by the way the echoes sounded.

Sonar would certainly be the best way to locate the sunken ship. What she planned to do was to ask Covington if he'd mind listening for the shipwreck.

She didn't want him to do anything that would interfere with his duties, and she realized that he would have to get permission. But she was sure no one would object if he just listened for anything that sounded like a shipwreck while the submarine was going around under the water.

Miss Pickerell enjoyed her trip in the airplane. Some day, she decided, she would bring her nieces and nephews on such a trip. It would be a way of showing her appreciation to them for taking care of her cow.

It was fun looking down on rivers and mountains and roads and towns—and even people when the plane flew low enough.

And Miss Pickerell almost held her breath when they began to fly along the shore of the ocean.

Although she had done quite a bit of traveling—including the trip she had made to Mars in a space ship—Miss Pickerell had never before seen the ocean. She had never realized how beautiful the ocean is.

All along the shore, slow white waves were rolling up against the beaches. At first, from a distance, the water looked clear and blue. But as the plane came closer, and Miss Pickerell could look directly down, she saw places in the water that were the most gorgeous deep green color, and other places that were a delicate light green.

Miss Pickerell knew, of course, that these places must be shallow, underwater beds of coral, built up over the years by the skeletons of millions and millions of tiny marine animals.

As the plane began to dip and circle, coming down to land at the airport at Cliffside Bay, Miss Pickerell looked even more closely. She thought it might be possible, since the water seemed to be so clear, that the sunken ship would show from the air.

But in spite of careful searching, she did not see it.

She did see something else, however. It was so incredible that she blinked her eyes. She thought she must be mistaken.

But she wasn't.

When she looked down again it was still there—the figure of someone floating in the water, some distance out from the shore of the bay. The person was wearing some sort of brilliant yellow suit that was very easy to see from the air.

The pilot of the airplane must have seen him too, because suddenly the plane changed its direction and swooped away from the shore and toward the floating figure. Lower and lower the plane circled, around the spot where the man was floating.

Suddenly a thrilling thing happened.

Without the slightest warning, a submarine burst through the surface of the water. It shot up at an unbelievably steep angle, which made Miss Pickerell realize how fast it must have been going.

It was so different from all the pictures Miss Pickerell had ever seen of submarines that she was sure this must be the atomic-powered submarine to which Covington was attached.

The nose of the submarine was rounded instead of being sharp. All the edges were streamlined. The narrow deck was absolutely bare. There was nothing at all sticking up from the top of the submarine except a sort of streamlined fin that seemed to be one smooth part of the whole structure.

Water spouted out of square openings in the side of the craft. Miss Pickerell supposed the submarine used water for ballast when it wanted to go down, and discharged the water again in coming to the surface.

Several figures emerged from a hole that opened in the front of the narrow flat deck.

The airplane kept circling around and around. Miss Pickerell was glad her seat was where she could see what was happening.

The men on the submarine leaned down and pulled something up behind them and tossed it into the water. In a moment this thing grew and expanded, until Miss Pickerell could see that it was a bright yellow life raft that was inflating itself automatically.

Two of the figures got into it and began to row it toward the man who was floating.

As soon as this happened, the airplane stopped circling and began to rise.

Miss Pickerell was sorry. She wished they could stay there until the man was rescued.

She wondered who the man was. She wondered how the submarine could tell that he was up there above them, floating around. She wondered how he had got there in the first place.

It would be terrible if he had been one of the survivors of the *Liberty Bell*, and had been drifting all that time, just waiting for somebody to save him.

---

Miss Pickerell didn't waste any time when she got to Cliffside Bay.

She took a taxi from the airport to the carpenter's hotel, and while she put in a long-distance call to her nieces and nephews, she looked out the window of her room to locate the submarine, so she could go right there and speak to Covington.

From the window she had a fine view of the whole bay. It was a very large bay. Miss Pickerell estimated that it might be about three miles across.

In the distance, off to the left, the bay ended at a point of land where the tiny black finger of a lighthouse pointed up against the empty sky.

On the right-hand side of the bay was a large island. Between it and the lighthouse was a smaller island.

The carpenter's hotel was at one end of a long cement dock that followed the shore line for some distance. At the far end of this dock, Miss Pickerell could see, by craning her head, where the submarine was stationed.

It had come back very fast, but that didn't surprise Miss Pickerell, knowing that it was an atomic-powered craft.

When Miss Pickerell's call was put through to her home, her oldest niece answered the phone.

Her niece told her that her cow was well and happy, that they had all enjoyed the movie of underwater adventure so much that they wanted to go again sometime, and that she thought it was too bad that Miss Pickerell hadn't taken her bathing suit, so she could go swimming in Cliffside Bay.

"I'll call you again, two hours from now," Miss, Pickerell said. "Just to be sure everything's all right." And she said good-by.

Miss Pickerell hadn't even taken off her hat, and now she picked up her purse from the bed and hurried downstairs and out to the dock. She didn't want the submarine to submerge again before she had a chance to make her sonar arrangements with Covington.

But Miss Pickerell didn't go to the submarine right away, after all, because at the edge of the dock, in front of the carpenter shop, she met a deep-sea diver.

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## CHAPTER FIVE

### Miss Pickerell Meets a Deep-sea Diver

Miss Pickerell didn't know, at first, that the man *was* a deep-sea diver. He certainly didn't look like one.

He was standing in the middle of a large flat barge that was equipped with derricks and pumps and various kinds of machinery. He was a timid-looking little man with mouse-colored hair, and he was biting his thumbnail nervously and looking out across the water.

Miss Pickerell probably wouldn't have noticed him at all, in her hurry to get to Covington, except for the words that were lettered in gleaming white on the side of the barge, just above the water line.

The words said DUKAS SALVAGE COMPANY.

"Well! Well!" Miss Pickerell said, as she walked briskly across the dock and looked down at the man in the barge. "This is a very happy coincidence. I presume you're getting ready to salvage the *Liberty Bell*, Mr. Dukas?"

"Oh, please!" the little man said. He looked all around as if he were afraid somebody might have heard her. "Please don't call me that! Please don't call me Mr. Dukas. Mr. Dukas wouldn't like it."

Miss Pickerell said, "I'm Miss Pickerell, Mr.—"

The man said, "Mr. Dukas calls me Gus."

"If Mr. Dukas hasn't located the sunken ship yet," Miss Pickerell said, "I know a way to find out. Has he?"

"Oh, I couldn't tell you," said Gus, as if the very idea frightened him. "Mr. Dukas wouldn't like it. Mr. Dukas doesn't like me to tell people anything."

"Where is Mr. Dukas?" Miss Pickerell asked.

"I don't know," Gus said. He seemed to be thinking. "I guess it's all right for me to tell you that," he said. "I guess Mr. Dukas wouldn't care if I told you I didn't know."

Miss Pickerell's patience was wearing a little thin.

"Does Mr. Dukas care if somebody gives you a message for him?" she asked.

"Sometimes he doesn't," said Gus.

"Please tell him," Miss Pickerell said, "that I'd like to be present when he starts diving for the cargo on the *Liberty Bell*. Part of the cargo is my—"

"Oh, I couldn't do that!" Gus said. "I couldn't tell Mr. Dukas that. Mr. Dukas doesn't like to dive."

"Well, for goodness sakes!" Miss Pickerell said. She pointed to the name on the side of the barge. "It says DUKAS SALVAGE COMPANY! How can he salvage anything without diving for it?"

"I'm the diver," Gus said. "Mr. Dukas is my tender."

"Well, then I'll tell *you*," Miss Pickerell said. "Please don't go away until I get back. I'm going down there to the other end of the dock, where that atomic-powered submarine is. There's a sonarman on the submarine named Covington, and I'm going to ask him to help locate the sunken ship—in case Mr. Dukas doesn't already know where to look for it. Besides, I promised his father I'd speak to him about something."

She turned away quickly and hurried down the dock, before Gus could tell her any more about Mr. Dukas and what Mr. Dukas didn't like.

A man was standing on the flat deck of the submarine, near the front. He reached up into the air with his arms, as if it felt good to stretch. Miss Pickerell noticed that he was wearing a dark blue suit, and a flat white cap with a black visor.

There were three gold stripes around the cuffs of his coat.

"Excuse me," she said. "I wonder if you'd mind taking a message to someone. There's someone on this submarine I'd like to speak to. It will only take a minute. I have to get right back to that salvage barge before it goes away."

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## CHAPTER SIX

### Miss Pickerell And The Atomic-powered Submarine

At the sound of Miss Pickerell's voice, the man put his arms down and turned around.

"It is not my habit," he said, "to run errands or carry messages to the members of my crew. My name is Commander Bushnell. I'm in command of this submarine. And I'm a very busy man."

Commander Bushnell didn't look very busy, but Miss Pickerell supposed he was just resting for a minute.

Then she remembered the man who had been rescued. Maybe Commander Bushnell was resting from that. Even though she wanted to make her arrangements with Covington as quickly as possible, she felt it would be only polite to inquire about the survivor.

"How is that poor man?" she asked. "That man you rescued?"

"*He's* doing very nicely," said Commander Bushnell. Miss Pickerell thought he sounded a little sarcastic—almost as though he might be angry at the man.

"Where is he now?"

Commander Bushnell tapped the deck of the submarine with the toe of his shoe.

"He's right down there," he said. "Right down inside. And that's exactly where he's going to stay. Until I tell him differently."

"Won't people be worried about him?" Miss Pickerell asked. "What about his friends?"

"He'll be lucky if he has any friends *left*," said the commander, "after what he did today. Any member of my crew who did what he did today has to be disciplined."

"You mean," Miss Pickerell said, "he was a member of your own crew! Why, how could he be! Why wasn't he inside the submarine?"

"That's a good question!" Commander Bushnell said. "If he *had* been inside the submarine, where he belonged, none of this would have happened. We were just starting out on a test cruise, to test the performance of one of our propellers."

"Propellers!" Miss Pickerell said. "Oh, goodness! I guess I made a mistake. I thought this was an atomic-powered submarine." She began to look along the shore to see if there was another submarine. "The person I'm looking for is on an atomic-powered submarine."

"It doesn't make any difference *how* submarines get their power," Commander Bushnell said. "Whether they're powered by Diesel engines, or by storage batteries, or by atomic energy, they still have to have propellers to drive them through the water."

"Oh," said Miss Pickerell. "I'm glad this is the right submarine. I wonder if you'd give me permission to speak to—"

"As I was saying," said Commander Bushnell, "we wanted to test our starboard propeller."

Miss Pickerell felt that for a man who said he was so busy, Commander Bushnell was certainly doing a lot of talking.

"You probably don't even know what starboard means," said Commander Bushnell. "It's surprising how few people do."

Miss Pickerell had turned her head to see if Mr. Dukas had appeared yet, but when Commander Bushnell said this, she whirled around.

"I certainly do know!" she said. "Starboard means on the right-hand side. It's a nautical term. Anything on the right-hand side of a ship is starboard. Anything on the left is port."

Commander Bushnell seemed surprised.

"Well, anyway," he said, "we have to test the performance of our starboard propeller. It's a new one, and we want to be sure that it's working right. We don't have to worry about the port one, because that one hasn't been replaced. We started out on our test cruise. But no sooner had we begun making the tests than we detected the presence of a mysterious object above us, by means of our sonar equipment."

"I know about sonar, too," Miss Pickerell said. "In fact that's the reason I—"

Commander Bushnell went right on.

He said, "When we came up to investigate, we found a member of our own crew who had been too careless to pay attention to the signals. When the signal for submerging had been given, he didn't pay attention."

"What *was* the signal?" Miss Pickerell asked politely.

"It sounds like this." Commander Bushnell opened his mouth and shouted, "Ah-oo-ga! Ah-oo-ga! *Anybody* connected with a submarine would know, when he heard 'Ah-oo-ga' twice that the submarine was going to submerge. But this man didn't pay attention to the signal. He didn't get down inside the submarine before the hatches were closed, and he got swept off into the water when we submerged."

"Where did he get that yellow suit he was floating in?" Miss Pickerell asked. She looked back at the barge again, but she still didn't see Mr. Dukas.

Commander Bushnell said, "Any man who has to be on the deck of an atomic-powered submarine when it's cruising is supposed to wear his exposure suit—in case he should get washed away by high waves. You can see for yourself there would be nothing for him to hang on to. Since atomic-powered submarines are capable of traveling under water for such long periods of time, all the equipment is retractable and can be drawn in. If the equipment were left sticking out, it would offer too much resistance to the water and slow down the speed of the submarine."

"You mean equipment like a periscope?" Miss Pickerell asked. "Or a snorkel?"

"An atomic-powered submarine doesn't really need a snorkel," Commander Bushnell said. "Snorkels are for submarines that run on Diesel power. Diesel engines have to have air, and a snorkel sucks it in for them. But an atomic power-plant can run without air."

"You must have been very glad that man was wearing his exposure suit," Miss Pickerell said. "At least he wasn't careless about that."

"I'd have been a good deal gladder," said Commander Bushnell, "if he had paid attention to the signals. As it is now, we have to start our test cruise all over again."

"Oh, good!" Miss Pickerell said. "Then maybe while the cruise is going on, I could request your sonarman to—"

"It's all because of that man's carelessness," said Commander Bushnell.

"He certainly was very careless," Miss Pickerell agreed. "Why *didn't* he pay attention to the signals?"

"He said he was paying attention to something else," Commander Bushnell said. "He said he was looking for porpoises. He said he was wishing there was some way he could catch a porpoise and send it home to his father. Can you imagine such a thing!"

"Why!" Miss Pickerell said, "that sounds like—"

"That's why Covington has to be disciplined," the commander said. "That's why I have ordered him to stay below until I tell him differently."

Miss Pickerell said, "I think that's a little severe, Commander. I'm sure he wouldn't do it again, if you'd just mention it to him."

"If you think I *didn't* mention it to him," the commander said, "you are very much mistaken. And now I must insist that you stop talking to me. You don't seem to understand that I'm a very busy man."

"Well, really!" Miss Pickerell thought to herself. "He acts as if I was the one who had been doing all the talking!"

The commander had started to climb down through an open hole in the deck of the submarine.

"While you're down there, Commander," Miss Pickerell said, "would you mind asking someone to tell Covington to come out and speak to me? It will only take a minute. I just want to ask him—"

"Apparently," Commander Bushnell said—he paused with just the upper part of his body visible—"you didn't understand me. Covington can't come out. Covington is being disciplined. Covington was careless. A submarine can't afford to have anybody on its crew be careless."

"All I want to do," Miss Pickerell said, "is just to ask him if he'd mind listening for the shipwreck of the *Liberty Bell* on the submarine's sonar equipment while you are cruising around under the water testing your starboard propeller. And to tell him something I promised his father I would."

"Covington will not be listening for *anything* on the submarine's sonar equipment while we are testing our propeller," Commander Bushnell said. All that showed now was his head and shoulders. "Covington is being disciplined. I thought I made that clear. Good-by, madame."

"I certainly am sorry I wasted all this time," Miss Pickerell said.

But Commander Bushnell had disappeared from sight.

"I feel terribly sorry for Covington," Miss Pickerell said to herself. It seemed terrible that he had to be disciplined like that, just because he had been a little careless. She was sorry now that she had promised to speak to him about not sending so many animals home for his father to take care of.

She might just as well not have looked for the submarine at all. She had wasted all this time and not accomplished a thing. She was no nearer getting back her rock collection than she had been before.

However, Miss Pickerell wasn't discouraged. She wasn't like the governor, she told herself. She wasn't like the governor, who thought there was nothing to do but wait.

There were other ways to find the whereabouts of the sunken ship. The governor had said that all of the passengers had been rescued. Miss Pickerell could try to find someone who had done the rescuing. They might be able to show her where the ship had gone down.

But first she would see if Mr. Dukas had arrived at his salvage barge.

Maybe Mr. Dukas already knew the location of the sunken ship.

Maybe they could start salvaging right away.

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# CHAPTER SEVEN

## A Shipwrecked Survivor

But when Miss Pickerell got back to the barge, even the man named Gus had disappeared. Looking down into the barge, Miss Pickerell saw nothing but machinery of various kinds.

Just to make sure that no one was inside the little house built at one end of the barge, Miss Pickerell called out.

"Yoo hoo!" she shouted.

But there was no answer.

Miss Pickerell suddenly realized how tired she was. She had been standing on the cement dock all the time Commander Bushnell had been talking to her. It was a good thing her room had such a good view. She could go there and rest, and still watch out the window for Gus and Mr. Dukas.

"Won't you have a seat, Miss Pickerell?"

Miss Pickerell was startled.

She looked up and saw the carpenter who owned the hotel that was on the second floor of his carpenter shop. He was sitting on a bench in front of his shop.

He was wearing a blue denim apron over his clothes, and he had a flat carpenter's pencil over one ear. He was holding a piece of lumber on his knees.

"I like to watch," he said, as he moved over to make room for Miss Pickerell. "I ought to be inside in my shop, but I like to watch for the submarine. I like to watch it surface."

Miss Pickerell looked back to the other end of the dock. "Why, it's gone!" she said.

"That's the way it is," the carpenter said. "One minute it's there, the next minute it's gone. Sometimes they go down and come up again every few minutes. I like to watch."

"They must go up and down awfully fast," Miss Pickerell said, "if they go all the way to the bottom."

"Atomic-powered submarines can go very fast if they want to," the carpenter said, shifting the board on his knee. "They can go faster *under* the water than regular ships can go on the top of it. But it wouldn't take anybody very long to go to the bottom right here. This bay is part of the continental shelf."

"What's the continental shelf?" Miss Pickerell asked.

The carpenter said, "All around the edge of every continent, the land under the sea slopes out gradually like a sort of slanting shelf. Here, I'll show you."

He took the carpenter's pencil from behind his ear, brushed some sawdust from the board on his knees, and drew a diagram on the board.

"This first part," he said, "is the continental shelf." He wrote the words on the diagram. "In some places the continental shelf is only a few miles wide. In other places it's almost two hundred miles wide."

Miss Pickerell leaned over and studied the diagram on the board.

She asked, "And does the land under the sea just drop off like that at the edge of the continental shelf?"

"Yes," said the carpenter. "That part is called the continental slope. And at the bottom of the continental slope is what's called the abyss."

He added these two terms to the diagram.

"The way you've drawn it," Miss Pickerell said, "I notice the abyss isn't altogether flat."

"That's right," said the carpenter. "In some places the floor of the abyss is flat. But there are other places where there are deep canyons, or high mountains."

"Mountains!" Miss Pickerell said. "Under the sea?"

"Some of the greatest mountain ranges in the world are under the sea," the carpenter said. "Only they don't show from the surface." He put his pencil back behind his ear.

Miss Pickerell continued to look at the diagram on the board.

"I hope I can remember how it looks," she said, "so I can draw a diagram of under the ocean for my nieces and nephews when I go home."

"Take the board home with you, if you like," the carpenter said generously.

"That's very kind of you," Miss Pickerell said. "Were you here when the *Liberty Bell* went down?"

"I was *on* the *Liberty Bell* when she went down," the carpenter said. "I was coming home from Europe. There were a lot of survivors, and I was one of them. I lost my brand-new wrist watch when it went down."

Miss Pickerell was excited. "Do you remember where it went down?" she asked. "Could you tell me?"

"I remember vividly," said the carpenter.

Miss Pickerell looked again at the diagram on the board, and she had an idea.

"Could you draw me a map of where it went down?"

"Of course I can draw you a map," the carpenter said. "It's not generally known, but in my youth I studied drawing. I'll draw it on the other side of this board."

Miss Pickerell took her memorandum book from her purse, and asked him if he'd draw the map there. It would be a good deal more convenient than carrying a board around with her.

The carpenter took the pencil from behind his ear again and spread the memorandum book flat on the board across his knees.

He began to draw the map.

"I'll explain it to you as I draw," he said.

He drew a curved line with a sharp point at the left-hand end.

"This is the bay," he said, "and right here is the dock, where we are right now." He drew the dock and wrote in the word.

He put his pencil on the point on the left-hand side, and made a cross. "That's the lighthouse you see," he said.

While he was writing in the word "lighthouse" Miss Pickerell looked up and saw, again, the tiny black finger sticking up against the sky.

"That lighthouse?" she asked.

"Yes," said the carpenter. "And there's another lighthouse you can't see from here. It's on another point of land." He drew the second point of land and indicated the second lighthouse.

Then he sketched in the large island on the right-hand side of the bay, and did the same for the smaller island. Then he took a ruler from his shirt pocket and drew two dotted lines. One line ran through the two crosses that marked the positions of the lighthouses. The other line ran through the tiny middle island to the outer shore of the large island.

"Now," said the carpenter, making a cross at the point where the two lines joined, "where the ship went down was exactly here. I remember because I was in the last lifeboat to be launched, just before the ship went under. The storm had

subsided by that time, and I remember that when I looked in one direction, I saw the two lighthouses on a line with each other, and when I looked in another direction, I saw that the tiny island was on a line with the outside shore of the big island."

He made a circle around the cross where the two lines joined, and wrote in the words "ship went down here."

"Were you thinking of salvaging the cargo, Miss Pickerell?"

Miss Pickerell told him about her rock collection.

"The reason I ask," the carpenter said, "is that in the excitement, I forgot to put on my brand-new wrist watch. If you should happen to find it down there—"

"Oh, mercy!" Miss Pickerell said. "I'm not going down there myself. I wouldn't dream of such a thing. Oh, look!"

A bright new station wagon was speeding along the dock. It was going so fast that Miss Pickerell could just barely tell that the words lettered on its side said DUKAS SALVAGE COMPANY. It screamed to a stop beside the barge, and two men jumped out.

One was the little man named Gus. The other was one of the largest men Miss Pickerell had ever seen.

"I guess that's Mr. Dukas," Miss Pickerell said, getting up. "I expect he's about ready to start salvaging the *Liberty Bell*."

Miss Pickerell felt much more rested.

"Thank you for this map," she said.

The carpenter said, "I'll put this board in your room, Miss Pickerell, till you're ready to take it home to your nieces and nephews."



# CHAPTER EIGHT

## The Dukas Salvage Company

When Miss Pickerell got her first close glimpse of Mr. Dukas, she wasn't surprised that such a timid-looking person as Gus might be a little in awe of him.

Mr. Dukas was an enormous man, built somewhat like a barrel. As Miss Pickerell walked up to the station wagon, she observed that he was wearing stained khaki work pants, canvas sneakers, and a bright red turtle-neck sweater.

Even his voice, when he spoke, sounded as though it came from inside a barrel. He had the loudest and most booming voice Miss Pickerell had ever heard.

"Gus!" he boomed, although Gus was only about six inches away from him, since they were both unloading things from the back of the station wagon. "Did you tell anybody?"

"No, Mr. Dukas," Gus said. "I was very careful not to, Mr. Dukas."

"Then how did that other salvage company find out?"

"I don't know, Mr. Dukas. Are we going to wait for Fred? Are we going to wait for that skin diver you're going to hire?"

"We ought to," Mr. Dukas boomed. "And he'd better be here by the time we get this stuff loaded on the barge. Oh, oh!"—he had seen Miss Pickerell. "Sh!" he said loudly, and he began to whisper to Gus.

Miss Pickerell had been about to say, "Hello, Gus," but after seeing and hearing Mr. Dukas, she was afraid it might make Mr. Dukas angry if he knew that she had spoken to Gus before. He might say something unkind to Gus.

She was still holding the memorandum book in her hand.

"Mr. Dukas," she said. "I presume you are Mr. Dukas since your station wagon says DUKAS SALVAGE COMPANY. I'd like to make arrangements with you about doing some salvaging for me."

Mr. Dukas didn't even look down over his barrel chest. "Some other time," he boomed. "Gus! Help me with this air compressor."

"Yes, Mr. Dukas," Gus said, as the two men lifted the machine out and carried it to the edge of the dock by the barge.

Then they ran back to get some more things from the station wagon.

Miss Pickerell could tell that Mr. Dukas must be very familiar with how the first person to salvage a cargo would be entitled to the salvage award. He seemed to be in such a hurry to get to the wreck before anybody else did.

"Please listen to me," Miss Pickerell said.

Mr. Dukas began to whisper again to Gus, and both looked back toward the carpenter shop.

"Yes, Mr. Dukas," she heard Gus say.

And then Mr. Dukas said, as Gus started away from him, "Tell him we'll give him ten per cent of the salvage award if he'll come and show us where the wreck went down."

"This is so *silly*," Miss Pickerell said. "If you'd just take the trouble to look, you'd see that I already had the carpenter draw a map."

At her words, Gus had hesitated.

"Hurry up, Gus!" Mr. Dukas boomed. "It may take him a little while to get ready, and that other salvage company may come around the island any minute."

Miss Pickerell planted herself directly in front of Mr. Dukas and held out her memorandum book open at the map.

Mr. Dukas started to walk around her, and then he saw the map and stopped. He leaned down to look at it more closely and he shouted, "Come back, Gus! Come and look at this. Just see what this lady has!"

"Yes, Mr. Dukas," Gus said, returning.

"I'll just take that map," Mr. Dukas said, reaching for Miss Pickerell's memorandum book. "We can start right away, Gus. We won't have to wait for the carpenter to get ready."

Miss Pickerell drew back. She remembered what the governor had said. He had said that the insurance company might sell part of the cargo to get money to pay the salvage award. She wanted to be sure that if her rock collection was to be sold, she would have the first chance.

"First," she said, "I'd like to have a definite understanding with you."

"Ten per cent," Mr. Dukas boomed. "We'll give you ten per cent of the salvage award."

"That isn't what I mean," Miss Pickerell said. "I don't mean that kind of an understanding."

Mr. Dukas whispered something to Gus, and they both looked back at the carpenter shop again, as if trying to make up their minds about something. Then they turned back to Miss Pickerell.

"All right," Mr. Dukas boomed. "We'll give you twenty per cent of the salvage award for the use of your map, just because it will save us time from having to wait for the carpenter. Now let's get going."

He jumped down into the barge and motioned to Gus to start handing the things down to him that they had unloaded from the station wagon.

"You don't understand me at all," Miss Pickerell said, looking down at him. "I'm not interested in that kind of an arrangement. What I want is—"

Mr. Dukas clenched his big hands and looked up at the sky for a moment.

"All right, *all right!*" he said. "Thirty-three and a third per cent. We'll all three be equal partners. Now, give us that map."

"Mr. Dukas," Miss Pickerell said. "I think you're being very stupid." And she heard Gus gasp as she said the words.

"We'll even let you hold the map, if you feel that way about it," Mr. Dukas said. "It's highway robbery, but we'll have to accept your terms under the circumstances. That other salvage company may get here any minute."

With a worried frown, he looked out toward the island before he resumed the loading.

Miss Pickerell gave up trying to explain. She might just as well go along. Once the rock collection had been salvaged, then she could insist on taking possession of it.

In a few moments everything was on board. Gus jumped down into the barge. Mr. Dukas entered the little house on one end of the barge, and Miss Pickerell heard a pleasant hollow-sounding chug chug chug coming from somewhere under the barge. Mr. Dukas stuck his head out of the little house.

"Well, come on!" he shouted. "What are you waiting for?"

Miss Pickerell climbed down a wooden ladder on the edge of the dock and stepped into the barge. She made her way around the various pieces of machinery and sat down on a wooden chest, with the open memorandum book on her lap.

"I'll tell you which way to go," she called out to Mr. Dukas.

She just wished the governor could see her now! She wished he could see how easy it was to arrange such things. The governor had been so sure there was nothing to do except to wait.

She had only been here at Cliffside Bay a little over an hour, and already she was an equal member of a salvage expedition, and already on the way to the scene of the shipwreck.

She hoped they could get the rocks salvaged right away. She ought to be back quite soon, so she could call her nieces and nephews as she had promised to do.

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# CHAPTER NINE

## Gus Goes Down to Find the Shipwreck

Miss Pickerell kept studying the map carefully.

From time to time, as the barge moved out into the bay, she looked up, till she saw that they were almost on a line with the two lighthouses. Then she told Mr. Dukas to turn to the left.

"Just keep the barge going toward the two lighthouses," she said. "I'll tell you when to stop. I'll tell you where the ship went down."

Miss Pickerell shifted her position on the chest so that she could look in the other direction. She fixed her eye on the tiny island which was now on their port side, and studied it in relationship to the large island.

Finally, when they were almost on a line with the tiny island and the outer shore of the big island, she told Mr. Dukas that this was the place.

Mr. Dukas came and looked over her shoulder at the map, as if he didn't trust her. When he had satisfied himself, by looking toward the lighthouses and then toward the islands, that Miss Pickerell was right, he went into the engine house and did something to the engine.

The chugging grew still and the barge glided slowly to a stop. Mr. Dukas threw over an anchor. It made a pleasant splashing thunk.

"Are you going to take soundings?" Miss Pickerell asked.

"No we aren't," said Mr. Dukas. "What's important in this situation is to take possession of the cargo before anybody else does."

Gus said, "It's too bad we couldn't wait for Fred, isn't it, Mr. Dukas? It's too bad we couldn't wait for that skin diver you were going to hire."

"It'll be too bad if that other salvage company catches up with us," Mr. Dukas boomed. "Suppose you just jump into your things, Gus, and save the talking for some other time."

"Yes, Mr. Dukas," Gus said. "I will, Mr. Dukas."

Miss Pickerell watched with a great deal of interest as Gus got into a heavy waterproof suit, and clumped to the edge of the barge.

He climbed down a ladder on the side of the barge and supported himself in the water while Mr. Dukas lowered a helmet over his head and fastened it.

It made Miss Pickerell remember the time she had gone to Mars, and how she had worn a pressure suit with a helmet.

Mr. Dukas tightened the fastening of the helmet and stepped back.

"Oh, wait!" Miss Pickerell shouted. "Don't let him go down yet, Mr. Dukas! Gus doesn't have his oxygen tank. He won't be able to breathe down there under the water."

Mr. Dukas looked at her oddly. "Just because you forced me to take you into partnership," he said, "doesn't mean that you know anything about what we're doing. I've been salvaging for twenty years; suppose you just let me handle things."

"But how can he breathe?" Miss Pickerell said.

"This is how," Mr. Dukas said, and Miss Pickerell saw for the first time that he was holding a sort of hose in his hand. One end of the hose was connected to Gus's helmet. The other end of the hose was attached to the air-compressor machine that Gus and Mr. Dukas had unloaded from the station wagon.

Mr. Dukas reached down and turned a switch on the air compressor with his free hand, and it began to put-put-put gustily. He picked up a rope, and a hand telephone, both of which were connected to Gus.

"Go on!" Mr. Dukas roared into the telephone, making motions to Gus with his hands.

Gus let go of the side of the barge and disappeared. Mr. Dukas carefully payed out the hose and the rope and the telephone cable.

A steady stream of bubbles began to come to the surface.

"Something's wrong, Mr. Dukas!" Miss Pickerell shouted. "Gus's suit is leaking. Look at all those bubbles!"

Mr. Dukas looked at her again—without saying anything. Then he shouted into the telephone, "All right down there?"

"I'm sorry, Mr. Dukas," Miss Pickerell said. "I guess I shouldn't have screamed at you like that. But I was afraid something was wrong."

"If something was wrong," Mr. Dukas said, "I'd be likely to notice it! I've been salvaging for twenty years. Those bubbles are from the air that is being pumped through Gus's suit."

Mr. Dukas looked at his watch and then he called into the telephone again. "O.K. down there?"

Miss Pickerell couldn't hear Gus's answer, but apparently it was satisfactory to Mr. Dukas because he kept paying out the hose and the rope and the telephone cable.

"I know what the hose and the telephone are for," Miss Pickerell said. "But why does he need a rope?"

Mr. Dukas said, "Did you observe Gus's diving suit? Did you observe that the feet were weighted with lead?"

Miss Pickerell remembered now how Gus had clumped across the deck.

"Oh, I understand," she said. "His suit is so heavy that he couldn't come up by himself. You have to pull him up. That's why there has to be a rope."

"A rope is handy for signaling, too," Mr. Dukas said, "in case anything goes wrong with the telephone."

"I see," said Miss Pickerell.

Suddenly the lines in Mr. Dukas's hands stopped moving.

"Are you there?" Mr. Dukas shouted into the phone. "Are you on the bottom? You are? All right. Look around. I'll give you a little more line."

For a few minutes, Miss Pickerell and Mr. Dukas remained in a tense silence.

Mr. Dukas kept looking at his watch, and then back over his shoulder, to see if the other salvage expedition had come into sight yet.

The longer the silence and the suspense lasted, the more excited Miss Pickerell became. She could hardly wait for the moment when Gus would announce that he had found the wreck.

She hoped it wouldn't be hard to locate whatever part of the ship her rocks were in.

Mr. Dukas suddenly screamed into the telephone. "What! It isn't! Not anywhere?"

"What's the matter?" asked Miss Pickerell.

"Let—me—see—that—map!" Mr. Dukas rudely grabbed it from her hand.

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# CHAPTER TEN

## Something Is Wrong with Miss Pickerell's Map

Mr. Dukas made a noise like an angry snort.

"I should have known it!" he said, as he shoved the map back at Miss Pickerell.

"Come on up, Gus," he said into the phone. "I'll pull you up to the first stage."

Miss Pickerell looked at the map.

"I can't see what's wrong," she said. "We're certainly just where the map says we should be. Besides, the carpenter told me himself that the ship went down exactly here."

Mr. Dukas leaned over and tapped the map in her hand with his finger.

"See what it says there?"

He stopped pulling on the rope and looked at his watch.

"I still don't understand," Miss Pickerell said. "What it says is 'ship went down here.'"

"Did you ever hear of ocean currents?" Mr. Dukas asked.

"I suppose I have," said Miss Pickerell. "I've never thought very much about them, though."

Mr. Dukas said, "What do we care about where the ship went down? What we want to know is where it is now. If there was a strong current when the ship went down, the ship might have moved in that direction before it finally came to rest."

"Why don't you ask Gus?" Miss Pickerell said. "Or can't he tell which direction the current is when he's inside his suit?"

"Of course he can tell," Mr. Dukas said. "He can feel the force of the current pulling against him. But it doesn't help any to know about the current right now. What we need to know is which way the current was going when the ship went down. Currents aren't always in just the same place. If *I'd* been asking someone to draw a map of the shipwreck, I'd have had him take that into account. This map of yours is worthless. Utterly worthless."

"Excuse me, Mr. Dukas," Miss Pickerell said. "You've stopped pulling on the rope. I guess you've forgotten that Gus is still down there."

"Will you *kindly* give me credit for knowing my own business," said Mr. Dukas. "It seems to be impossible for you to believe that, after twenty years' experience, I probably know what I'm doing! I *can't* pull Gus up any farther right now, or it would give him the bends. You see that air compressor?"

Miss Pickerell said, "Yes."

"That air compressor has been pumping air under pressure into Gus's suit all the time he's been in the water. The farther down he goes, the more air pressure he needs to balance the pressure of the water."

"I see," said Miss Pickerell, who wasn't quite sure that she did.

"All the time Gus has been down there," Mr. Dukas said, "he's been breathing air under pressure. When a person breathes air under pressure for very long, nitrogen gets absorbed from his lungs into his blood and—"

"Excuse me," Miss Pickerell said. "I think you mean oxygen, instead of nitrogen. Oxygen is what we—"

"It's quite obvious," Mr. Dukas said, looking at her coldly, "that you are not familiar with the fact that there is four times as much nitrogen in the air as there is oxygen. When a person is breathing air under pressure, nitrogen is absorbed by his blood and it doesn't come out right away. If the person is pulled up too fast, so that the pressure decreases too suddenly, the nitrogen in his blood begins to fizz—just like a bottle of ginger ale when you first open it."

"Mercy!" Miss Pickerell said.

"It's a very painful condition—especially in a person's joints. That's why it's called the bends. Because if a person gets pulled up too fast, his joints hurt so much he can't stand up straight."

"If a person did get pulled up too fast," Miss Pickerell asked, "would there be anything to do?"

"Only two things," Mr. Dukas said. "Either put him in a recompression chamber, where the pressure of the air can be built up and then decreased gradually. Or else put him back under the water, at the proper depth of pressure, and make him stay there for the proper length of time. Till he's been decompressed."

"How long does Gus have to stay down there?" Miss Pickerell asked. "How long before Gus will be decompressed?"

Mr. Dukas looked at his watch. "Ten more minutes," he said. "I know just how long he was down, and I could tell how far down he went—by this rope that has distances marked on it—so I know how long he has to be decompressed. If a person is under the water for too long a time, he has to be decompressed at more than one stage. He has to stay at a certain depth for a certain length of time, and then come to a higher depth, and stay *there* for a certain length of time."

"Do you just estimate the time and the depth?" Miss Pickerell asked.

"No, no," Mr. Dukas said impatiently. "There are standard decompression tables that every diver and tender must be familiar with."

"Poor Gus!" Miss Pickerell said. "It must be pretty boring being down there all by himself. I wonder what it would be like."

Mr. Dukas was speaking into his phone.

"Yes, Gus," he said. "What do you want?" A pause. "There *is*!"

"That's all we need!" he said to Miss Pickerell. "All we need is a submarine snooping around down there bothering us!"

"Oh, poor Covington!" Miss Pickerell said to herself. She had forgotten all about him. "I wonder if he's still being disciplined."

"What are we going to do now?" Miss Pickerell asked, as Mr. Dukas looked at his watch again. "There must be some way we can locate the sunken ship. It's too bad we don't have some sort of underwater television."

"A very helpful suggestion!" Mr. Dukas said. "Considering that that other salvage expedition—the one that may get here any minute—*does* have underwater television. They have a big watertight camera, with floodlights attached to it, that they let down into the ocean. The camera takes pictures of the bottom of the ocean. And whatever pictures the camera takes show up on a television screen that's on the barge."

A sudden shout, close beside them, made them both turn around.

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# CHAPTER ELEVEN

## Trouble with the Atomic-powered Submarine

The submarine had surfaced.

Without the slightest warning, without the least bit of sound, it had come to the surface, right beside the barge.

Two sailors in blue dungarees and white caps were standing on its deck. In front of them was Commander Bushnell.

Commander Bushnell spoke.

"Three-fourths of the earth's surface is covered with water," he said sarcastically. "Is it too much to ask you to carry on your activities somewhere else. We're doing a series of tests. Who's in command here?"

"All of us," Mr. Dukas said. "We're partners. We're equal partners. All three of us."

"All three?" Commander Bushnell looked puzzled.

"Our diver is being decompressed," Mr. Dukas said.

"Yes," Miss Pickerell said. "I'm surprised you didn't see him down there. He saw you."

"Can you give a satisfactory explanation of what you're doing here?" Commander Bushnell asked.

"Why, of course!" Miss Pickerell said.

But Mr. Dukas whispered to her, "Don't tell him. We don't want any *more* people to know about the wreck."

"But we ought to explain," Miss Pickerell said. "He might think we're doing something wrong."

"Well?" said Commander Bushnell.

"Here!" Mr. Dukas said, and he put Gus's lines in Miss Pickerell's hand. "I'll handle this."

Miss Pickerell thought she ought to explain to Gus, on his telephone, what was happening, so he wouldn't worry. That was why she didn't hear how Mr. Dukas handled it. Apparently he hadn't handled it very well, because when he stopped talking into Gus's phone, she heard Commander Bushnell say, "And that partner of yours! I remember her now. She was asking me a lot of questions. She might even be a spy, for all I know. I'm going to take you all into custody."

"Why, I never heard anything so ridiculous!" Miss Pickerell sputtered.

Mr. Dukas started to say something to Commander Bushnell, and then he seemed to change his mind.

Miss Pickerell could tell that he wanted to say he had never seen Miss Pickerell before today, but that if he did, he would have to explain about the sunken ship, and even more people would know about it and start looking for it.

"Two of my men will come aboard," Commander Bushnell said, "and as for you"—he looked right at Miss Pickerell—"you'll have to come with us."

Miss Pickerell's first reaction was one of shocked disbelief that anyone could accuse her of being a spy. But then she realized that Commander Bushnell was only doing his duty.

"Commander Bushnell," she said. "If the governor told you I wasn't a spy, would you believe it?"

"Yes, of course," said the commander.

"Do you have equipment for sending messages ashore on your submarine?"

"We have all kinds of equipment."

"Then," Miss Pickerell said, handing Gus's lines back to Mr. Dukas, "then I'm ready."

She told Mr. Dukas not to worry, that she'd be right back, and stepped to the edge of the barge.

The two sailors reached out and helped her across to the deck of the submarine.

It was a little humiliating, she thought, that she should have to appeal to the governor in this way. But there was one thing good about it. It would be exciting to find out what the inside of an atomic-powered submarine was like. She must look around carefully, so that she could remember everything to tell her nieces and nephews.

She stood on the edge of an opening in the submarine's deck and looked down.

"Blindfold her," Commander Bushnell said to the two sailors, "before you take her down inside. Don't answer any questions. And don't let her touch anything. We can't take any chances with her until we find out who she is."

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# CHAPTER TWELVE

## Miss Pickerell Is Arrested

The next few moments were the strangest Miss Pickerell had ever spent in her whole life.

Ordered to keep her hands spread flat on a table in front of her, she sat, blindfolded and silent, on a wooden bench, with only her ears and her nose to give her any clue to the nature of her surroundings.

She heard occasional muffled clanging noises; she heard men's voices calling back and forth, though it was hard to make out the words; and she heard the steady breathing of someone close to her, watchful and silent. Miss Pickerell was being guarded.

The tantalizing smell of fresh coffee made her think they must be in some sort of dining room.

Suddenly, the floor under her feet pitched sharply, and even though she had been warned a moment before by a double "Ah-oo-ga" from a loud speaker that seemed to be in the ceiling over her head, Miss Pickerell couldn't help gasping. She held onto the edge of the table to steady herself till the floor leveled out again.

"Don't be alarmed," a kind voice said. "We've just submerged." It was the voice of a young man, friendly and considerate.

"Thank you," Miss Pickerell said, "but I don't think you're supposed to talk to me."

"I know I'm not," the voice said. "I just didn't want you to be frightened."

Again they sat in silence. Miss Pickerell wondered how long it would take Commander Bushnell to get a message back from the governor. She wondered about Mr. Dukas and Gus. She hoped they wouldn't go away. She hoped they wouldn't give up trying to find the wreck of the *Liberty Bell*.

Hurrying footsteps clattered on metal, coming closer, and someone shouted, "It's O.K., Covington. You can let her go. The commander sent a message to the governor. The governor says she's O.K." And the footsteps died away again.

"For goodness' sakes!" Miss Pickerell said, as her guard removed her blindfold, "I didn't know you were Covington!"

Covington was almost as surprised as Miss Pickerell was, till she explained how she knew who he was. "You look just like your picture," she said. "In your father's photograph studio."

She looked around. "I *thought* I was in some kind of dining room," she said.

"This is the crew's mess," Covington said.

It was a cozy room, almost filled with bright-colored long tables and benches, at one of which Miss Pickerell was sitting. Covington sat opposite her. The walls were a cheerful red.

"Wouldn't you like a snack, Miss Pickerell?"

"Not if anybody has to fix something special," Miss Pickerell said, but Covington pointed to the table behind her. It was covered with all kinds of food—cakes, pies, cheese, sandwiches, cold meat, milk.... At one end of it was a large coffee urn. That was what Miss Pickerell had smelled.

"There's always something here for us to eat—even in the middle of the night," Covington said. He got up and poured Miss Pickerell a glass of milk, and passed her a plate of sandwiches. Then he took one too.

"I'm not surprised you're so cheerful and healthy, Covington," Miss Pickerell said. "With all this good food to eat all the time, and the walls painted such a cheerful color."

"Well," Covington said, and then he stopped to swallow what was in his mouth, "we were all cheerful and healthy before we came. The Navy doesn't let anybody be on a submarine crew unless he is already cheerful and healthy. That's especially important on an atomic-powered submarine, because we are apt to stay under the water for such a very long

time. If we weren't healthy, we might not be able to stand it. And if we weren't cheerful, we might get on each other's nerves. An atomic-powered submarine can stay down as long as it wants to because it doesn't have any storage batteries to run down, and it doesn't need any air for Diesel engines, and it doesn't have to refuel."

"Do you suppose I could see the atomic power plant?" Miss Pickerell asked. "Could you show me how it works?"

"Nobody can see it," Covington said. "It's all sealed up in a special unit inside the submarine. But I could tell you how it works. Have another sandwich, Miss Pickerell."

"Thank you," Miss Pickerell said. "They *are* delicious."

Covington said, "An atomic-powered submarine has its fuel—a little bit of uranium—sealed up right inside the power plant. There are very responsive instruments that control the rate at which the uranium atoms explode. When the uranium atoms explode they give off a great deal of heat. To keep the power plant from overheating, there are coils of liquid circulating all through it. The liquid in these coils gets hot from the atomic power plant, and these coils, with the hot liquid in them, run through boilers where there is water. This water in the boilers gets so hot from the hot liquid in the coils that the water turns into steam which creates a tremendous pressure and turns the blades of a big turbine. The turbine is connected to the propeller shaft. When the shaft goes around, it makes the propellers turn in the water outside. And it's the propellers that make the submarine go."

"Thank you," Miss Pickerell said. She was a little confused, but she didn't say so.

"There's one thing I don't understand," she said. "Commander Bushnell said an atomic-powered submarine didn't need a snorkel. But I should think you would need it even more. I should think the longer you were going to stay under the water, the more you would need a snorkel to get air to breathe."

Covington said, "An atomic-powered submarine carries its own supply of oxygen for breathing. It's a good thing too."

"Why?" Miss Pickerell asked.

"Because," Covington said, "a snorkel actually isn't a very comfortable thing. There are almost always waves, even way out in the ocean, and whenever a wave hits the snorkel, some of the water would run down inside the submarine, except that the snorkel automatically closes itself till the wave has passed. But a Diesel-engine submarine keeps right on using air, and if the snorkel is closed, why then the engine pulls air out of the rest of the submarine. Every time this happens, the pressure of the air changes in the submarine and it's pretty uncomfortable for the crew. Their ears keep popping, and it's hard for them to swallow if they're trying to eat anything."

Miss Pickerell remembered what Mr. Dukas had been telling her about the pressure that divers experienced under water.

"I guess pressure is pretty important in the ocean," she said. "Do you think we're going to start moving pretty soon?"

"We're moving right now, Miss Pickerell."

"Why, we can't be!" Miss Pickerell said. "We're standing perfectly still. I can tell by the way it feels."

"That's just because you can't hear any engine noise," Covington said. "Atomic-powered submarines have engines that are absolutely silent."

Miss Pickerell told Covington about her rock collection that had been shipwrecked.

"I'd be glad to try to help locate the ship for you on our sonar equipment," Covington said. "Except that I'm being restricted."

"Restricted?"

"I'm restricted to just certain parts of the submarine. It's a way the Navy has of disciplining people."

"Are you *still* being disciplined!" Miss Pickerell said. "I think that's terrible, Covington. I think it's terrible that Commander Bushnell is restricting you just because you were a little careless."

"No, it isn't, Miss Pickerell," Covington said. "I ought to be restricted. A submarine can't afford to have anybody on its

crew being careless."

"It just doesn't seem fair," Miss Pickerell said. "You didn't *mean* to be careless."

"Commander Bushnell wouldn't do anything that wasn't fair," Covington said. "Commander Bushnell is so fair about things, that he even apologizes if he's made a mistake."

Somebody was coming toward the crew's mess. They could hear his footsteps sounding on the metal under his feet.

It was another sailor in blue dungarees and a white hat. He looked just as cheerful and healthy as Covington did.

"The commander says to put the lady ashore," he said. He went over to the coffee urn and got a cup of coffee. Miss Pickerell was fascinated to see the way he held the coffee without spilling when the floor again began to slant under their feet. He didn't spill a drop.

"We've surfaced, Miss Pickerell," Covington said. "I guess I'd better show you the way to the hatch."

He guided Miss Pickerell along a narrow passageway to a metal ladder mounted in the wall. "Here's the hatch," he said. "I'll go up and open it for you. But I can't go out."

Miss Pickerell looked around for Commander Bushnell to tell him good-bye. But he wasn't there.

"Good luck, Miss Pickerell!" Covington said.

Miss Pickerell thought she was going to need it when she climbed out of the hole in the submarine and saw where the submarine had brought her.

She was back at the dock again!

Not only that, but so was Mr. Dukas's salvage barge, with Mr. Dukas and Gus looking unhappily out across the bay.

But the very worst of all was what Mr. Dukas and Gus were looking at.

Out across the bay, between the small island and the lighthouse, was another, and a larger barge.

"That's the salvage company that has the underwater television," Mr. Dukas said glumly, when he saw Miss Pickerell coming along the dock. "I hope you're satisfied! Making us all this trouble!"

The two sailors who had taken over the barge got up from where they had been sitting and looked toward the submarine till one of the sailors there climbed out on deck and motioned to them to come.

"I know it's unfortunate," Miss Pickerell said. "I feel just as badly as you do. But let's not be discouraged. Let's—"

"Discouraged!" Mr. Dukas boomed. "The minute that other company takes possession of the cargo, the salvage rights belong to them. They're already out there. They have underwater television. And here we are! With a map that can't be depended on. And no skin diver. And a submarine commander who suspects us of being spies!"

"Well, *that* part of it's all right," Miss Pickerell said, and she explained how the governor's message had cleared them.

She found herself wishing there was some way she could get in touch with the other salvage company. If they were going to be the ones to find the ship first, she would like to arrange with them about her rock collection.

But that was only for a moment. She realized that that wouldn't be fair to Mr. Dukas and Gus. After all, they *had* taken her into partnership, even though it had been the result of a misunderstanding. And it was because of her that the commander had become so suspicious that he had ordered them to leave the scene of their operations.

"We've just got to find the ship first, that's all," Miss Pickerell said. "You start the engine, Mr. Dukas. I'll run and get the carpenter and ask him to come with us. He can be explaining about the currents while we are on the way out."

"A splendid idea!" Mr. Dukas boomed. "Do you happen to know where the carpenter is now? He's on board that other salvage barge. Along with Fred, our skin diver, the man we didn't wait for because you said you had a map that would show us exactly where to find the ship! Do you have any more brilliant ideas?"



# CHAPTER THIRTEEN

## A Rival Salvage Company

"Well, I know one thing," Miss Pickerell said. "We'll never find the sunken ship if we stay here. Let's go back out there and try again. You don't mind going down again, do you, Gus?"

Gus looked nervously at Mr. Dukas. "Not if Mr. Dukas wants me to," he said.

Mr. Dukas didn't say anything, but Miss Pickerell was relieved to see that he walked over to the engine house and started the engine. The barge began to edge away from the dock.

"Well, come *on!*" Mr. Dukas shouted, and Miss Pickerell scampered down the ladder and stepped across into the barge.

It seemed to her that the barge was a little lower against the dock than it had been before, but she thought she imagined it. Then she remembered about ocean tides. She remembered about the changing pull of the moon and the sun against the ocean waters as the earth rotates. A place like this bay would have two high tides each day. And twice a day the water would drop back. The barge really was lower. It was because the tide was going out.

Gus was nervously biting his thumbnail and looking at Mr. Dukas.

"Mr. Dukas," he said, "if you want me to, when we get out there, I'll go down in Fred's skin-diving equipment instead of in my diving suit. All his equipment is here in this chest." He walked across to a chest and opened it.

For the first time, Miss Pickerell heard Mr. Dukas speak almost gently to Gus.

"It's too much of a risk, Gus. But thank you just the same."

"What *is* all this talk about skin diving?" Miss Pickerell asked, and she joined Gus in front of the chest. "Why is skin diving any better than diving in a suit, the way Gus does?"

"Because," Mr. Dukas said, "a skin diver carries his own supply of compressed air. He doesn't have to depend on a hose to provide his air. He can move around freely and cover a good deal more territory."

"This is his breathing apparatus," Gus said, and he held up a pair of tanks strapped together. "I'll show you how it works."

He fastened the tanks to his back by putting his arms through shoulder straps. Two large black pleated tubes ran across his shoulders and met in front at what Gus said was the mouthpiece. "The diver puts this in his mouth and breathes through it," Gus said.

"And this mask goes over his eyes and nose." He took from the chest a rubber mask with a large glass pane in the middle of it. He explained to Miss Pickerell that there were wires embedded in the rubber so that the mask could be molded to fit tight against the face. "That keeps the water away from his eyes," he said, "so he can see."

"Doesn't he get awfully cold down there?" Miss Pickerell asked.

"Not when he wears this."

Gus held up a flexible suit made of foam rubber. It had elbow length sleeves, and the legs were long enough to reach a person's knees. "It keeps him nice and warm. There's even a foam-rubber cap if he wants to wear it."

Miss Pickerell saw a pair of green rubber flippers in the chest. She suddenly remembered the poster she had seen in front of the Square Toe City Picture Show, where divers with fins on their feet and air tanks on their backs were floating around exploring a shipwreck. Maybe such things weren't so impossible after all. It certainly was a much better and a much faster way to explore anything under the water than wearing a heavy diving suit with shoes that had to be weighted down with lead.

"You know something, Mr. Dukas," Miss Pickerell said. "I think we ought to let Gus go down in Fred's skin-diving equipment instead of in that heavy old suit."

"You do?" Mr. Dukas said coldly. "I don't. It just happens that Gus doesn't know how to swim."

"I wouldn't need to know," Gus said. "Maybe." But he sounded very nervous.

Miss Pickerell was touched. No wonder Mr. Dukas had spoken so gently to him just now.

"I'd better get ready to go down as soon as we get there," Gus said. He began to take off the skin-diving equipment.

They were now so close to the other barge that Miss Pickerell could see people on board. She recognized the carpenter, who was looking over the edge of the barge at something. She also observed several people crowded around what was obviously a small television screen.

"That's one good sign," Mr. Dukas said. "They wouldn't still be looking at the television screen if their underwater television had located the ship."

Mr. Dukas went into the engine house and turned off the engine. Their barge glided to a stop, very close to the other one, and Mr. Dukas lowered the anchor.

"I see Fred," Mr. Dukas said. "He's wearing their skin-diving equipment. They must have hired him to dive for *them*. He'll go down as soon as the underwater television locates the ship, and establish their right to do the salvaging."

"How will he do that?" Miss Pickerell asked.

"By bringing up a piece of the cargo. Wait a minute, Gus. I'm going down this time."

"But, Mr. Dukas!" Gus said. "You don't like to dive."

"I said I was going down." Mr. Dukas sounded just as gruff as ever, but this time Miss Pickerell recognized a gentleness underneath. She knew that Mr. Dukas was going down just because Gus had been so generous as to try to skin dive, even though he didn't know how to swim.

Maybe Mr. Dukas knew how to swim. Maybe he was going to use the skin-diving equipment. But Miss Pickerell knew he wasn't when he said, "I guess you were right that time you thought we ought to learn how to swim, Gus."

It didn't take Mr. Dukas very long to get ready and to climb over the side.

As Miss Pickerell watched how carefully Gus payed out the lines, and realized how slowly Mr. Dukas would have to walk around once he got there, a daring idea began forming in her head. She wondered why it hadn't occurred to her before. It was so obvious.

After all, she was the only one of the three partners who knew how to swim.

Quietly, without attracting Gus's attention, she lifted the foam-rubber suit from the chest and went into the engine house to change her clothes.

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# CHAPTER FOURTEEN

## Miss Pickerell Meets an Emergency

Miss Pickerell managed to get the air tanks fastened to her back, and the mask put on and molded to the shape of her face, before Gus turned around and noticed her.

She had just leaned down to take the pair of rubber foot fins out of the chest when she heard Gus call her name in a horrified tone of voice.

"Miss Pickerell! You can't! You mustn't! What'll I tell Mr. Dukas!" He had his hand over the telephone mouthpiece.

"Just don't tell him anything," Miss Pickerell said. "I'll go down on the opposite side of the barge and search there. The only thing is, how will I know how long I have to stop, on my way up, to be decompressed?"

Gus looked at the measured line in his hand which had now stopped moving, and he told her how far down Mr. Dukas was. Mr. Dukas was on the bottom. He told her just how long she could stay down, at that depth, without having to be decompressed on her way up.

"You'll have to wear Fred's waterproof wrist watch," he said. "It's there in the chest. You'll have to watch the time very carefully. Take that waterproof flashlight, so you can see to look at the watch. But I do wish you wouldn't, Miss Pickerell. It isn't safe for anybody to go diving alone. Every diver ought to have a tender, unless it's an emergency."

"Well," Miss Pickerell said, "this is sort of an emergency," and before Gus could say anything more, she walked quickly to the edge of the barge, sat down to put on the rubber fins, and put the mouthpiece in her mouth. Then she took it out again to say, "How do I turn on the air in the tanks?"

"It regulates itself automatically as soon as you're in the water," Gus said. "But you mustn't go down without a weighted belt, to balance the buoyancy of your body."

Miss Pickerell returned to the chest, with the long rubber fins flapping against the deck of the barge, and put on a belt, weighted with pieces of lead sewed into pockets.

"Now," she said, "I guess I'm ready." She put the mouthpiece back in her mouth.

"Wait!" Gus said. "Just breathe easily through your mouthpiece. And keep swallowing. Fred says you have to keep swallowing so you won't notice the pressure in your ears. I wish you wouldn't go, Miss Pickerell!"

But Miss Pickerell did not answer. She went to the edge of the barge, trying to breathe easily and naturally, paused a moment, sitting on the edge while she fastened her cap, and then, lifting herself with her hands, she shoved herself off into the water.

In spite of the foam-rubber suit, the shock of the cold against Miss Pickerell's arms and legs was so great that she almost stopped breathing for a minute. But that was only for a moment. Almost immediately she noticed a sort of tingling warmth. Her skin felt alive and glowing.

But Miss Pickerell had no more thoughts for such things. What was happening to her—this experience of being inside the sea—absorbed all her fascinated attention.

Never would Miss Pickerell have supposed such a wonderful, magical thing could happen to her.

Her body was in perfect balance with the water. Only a tiny flip with the rubber fins was enough to send her through the water. She could remain still in the water, without moving. There was no sound. Even when she loosened the strap of her cap so that it did not press against her ears, she heard nothing.

She rolled over on her side, and looked up. Above her she saw the surface, like a ceiling, mottled with waves and sunlight. She saw the bottom of the barge. Clusters of silvery air bubbles rose from her breathing apparatus and went dancing to the surface each time she exhaled.

At last Miss Pickerell knew what she was going to do for her nieces and nephews. She was going to see that some day they had the opportunity to go skin diving beneath the surface of the sea.

Miss Pickerell pointed her head toward the bottom, and with easy, gentle kicks of the fins, propelled herself lower and lower.

As she descended, the water began to change in color, so that the bottom, when she reached it, looked greenish-blue. She saw clear patches of sand, she saw meadowlike spaces where weeds were growing, she saw large rocks, and she saw fish—many of them. They were all different sizes, and she found that when she remained motionless in the water, they did too.

It was hard to take her attention from this fascinating experience, but Miss Pickerell remembered the importance of not staying down longer than the length of time that Gus had told her would be safe.

She turned on the flashlight in her right hand and looked at the waterproof watch strapped to her left wrist. And then Miss Pickerell had the most wonderful experience of all!

Everything touched by the glare of the flashlight—every rock, every seaweed, every fish even, changed its color. No longer were they bluish-green. Some were pink. Some were brown. Some were yellow, or orange, or red. They were so beautiful it almost hurt.

Miss Pickerell realized they only *looked* bluish-green because the depth of the water kept out so much of the light from above.

Before turning off the flashlight, Miss Pickerell checked the watch again. Almost half the time had gone.

She began to explore the bottom, swimming a few feet above the sand and weeds.

She did not see Mr. Dukas. She did not see the other skin diver named Fred. He was probably still waiting on the other barge. She did, however, very soon notice a dim light that was coming steadily closer and growing brighter and brighter. This, of course, must be caused by the floodlights of the underwater television camera that was suspended from the other barge. It would need very powerful lights down here where everything was so dim and green.

Suddenly Miss Pickerell stopped. There was a wall ahead of her! A curving wall of metal. Miss Pickerell put her hand against it and knew she had found the ship. It rose and curved away above her, smooth and clean except for a few barnacles—a newly wrecked ship, one that had just gone down. An older shipwreck, she knew, would have been overgrown by undersea weeds.

Miss Pickerell swam up along the curving wall until she reached the prow, and turned on her flashlight to read the enormous nameplate, LIBERTY BELL.

Time was running short now.

Miss Pickerell swam over the railing. She turned on her flashlight again as she went through an open tilted doorway into the dim interior of the ship.

An object, lying on the lower angle of the crazily slanting deck, reflected back the light. Miss Pickerell picked it up—a metal-banded wrist watch—and fastened it to her right wrist.

She swam on, throwing the beam of her flashlight ahead of her in the gloom—seeking the cargo ... seeking something she could take with her to establish their right to salvage the ship.

Once she turned off her flashlight and looked back through the dimness. At the far side of this enclosure, the slanting door through which she had entered revealed a faint glow from somewhere outside. The television camera had located the ship! Soon the other skin diver would descend. Soon he, too, would be searching the wreck.

She swam on, guided by her flashlight, and passed through another slanting doorway. If only she could find the cargo!

Now she was on another part of the deck. Ahead of her yawned another dark doorway.

A movement in the water to her left caught her attention, and she looked down.

It was Mr. Dukas! Encased in his heavy suit, he was walking along the bottom, lifting his heavy feet slowly with each step, and holding his lines carefully to keep them from becoming entangled. He was going in the wrong direction. He had not seen the ship.

Whipping the light around, Miss Pickerell headed for the dark doorway. Even before she was inside, the light had picked out the jumbled mass of broken crates and chests that formed a pile of rubble in the lower angle of the wildly slanting deck. In the water above her hand, smashed wooden boxes and shattered beams of wood floated against the ceiling.

She had found the cargo!

She looked back, to see if the other diver had followed her, and sensed a dark obstruction passing between her and the dimly lighted surface so far above. She rolled over to look up at it.

It was the submarine. It was moving backwards. Miss Pickerell could see the huge propellers above her turning slowly in the water. They must still be making tests.

A sound reached her from the prow of the ship. A sound of metal striking metal. The other skin diver must have arrived!

Miss Pickerell started to swim through to where the cargo was. She must find a bit of cargo and bring it to the surface before the other diver did!

But even as she began to swim forward, something stopped her ... some strange feeling of something wrong.

At first Miss Pickerell did not know what it was. Then suddenly she understood. Her heart began to thump wildly with the frightened realization. The submarine above her was moving in the direction of Mr. Dukas! With its silent atomic engine, no sound betrayed its presence. She saw Mr. Dukas still plodding slowly along the bottom. He did not know his danger.

He did not know that in the water above him the huge submarine was coming closer and closer to the place where his lines ran down from the surface.

Even as Miss Pickerell looked, the propellers began to turn a little faster, and the huge craft above her shot backward. Then the propellers stopped, and the submarine stopped too. Its starboard propeller was only a few feet now from Mr. Dukas's lines. If it should start—if they should start testing it again—Mr. Dukas's lines would become entangled. It would cut his air hose. He would drown!

How could she warn him?

She signaled with her light, but at that distance the glow did not penetrate the murky dimness. She tried to shout, but her voice only reverberated in her mouthpiece.

Behind her, closer now, she heard again the clang of metal against metal. The other diver! Perhaps he could help.

But now there was no time. Slowly, the huge starboard propeller began to move. And slowly the craft swung around, its wicked propeller blades now only inches from Mr. Dukas's air hose.

Miss Pickerell had only one faint hope.

Summoning all her strength, and using wild powerful kicks of her rubber flippers, Miss Pickerell drove herself straight up. Up, up, till her head bumped against the underside of the submarine.

Taking the flashlight, she banged and banged and banged against the metal sheathing of the craft, kicking steadily with the fins to hold herself in position.

It was only a faint hope. But someone might hear the noise of the metal flashlight against the metal of the submarine.

She had no way of telling if they heard her. She could not see, from where she was, whether the propeller had stopped turning. She could only continue to bang the flashlight again and again and again, until her arm was so tired from the resistance of the water that she could hardly lift it up to bang once more.

There was a sound inside the submarine! Someone inside the submarine was tapping. Someone was answering her. She

had been heard.

They would know now that something was wrong!

Miss Pickerell almost sobbed with relief.

Swimming out from beneath the submarine, she tried to read her watch. But the battered flashlight no longer worked, and it was too dim down here for her to be able to tell how long she had been down.

She would have to go to the surface. If she had been down too long, Gus would know. He would send her back to be decompressed.

She saw the submarine was now moving forward and upward, very slowly, and very cautiously. They were moving away from Mr. Dukas's lines.

Mr. Dukas was safe.

Miss Pickerell kicked her rubber fins and rose gently to the surface.



# CHAPTER FIFTEEN

## Covington Again

"I'm awfully sorry, Gus," Miss Pickerell said. She was already dressed, and she and Gus were waiting for Mr. Dukas to be decompressed.

In spite of all that had happened, and in spite of the fact that it had seemed to Miss Pickerell that she must have been under the water a long time, Gus had told her that she had come up at just the right time. She wouldn't need to be decompressed.

But Mr. Dukas had been down longer. Gus couldn't pull him all the way up yet.

"I wish I could have brought up some of the cargo," she said.

"You saved Mr. Dukas's life," Gus said. "That's enough."

Miss Pickerell had already explained to Mr. Dukas, over his telephone, what had happened, because she didn't want him to blame Gus for letting her go down.

Over on the other barge, everyone seemed to be very happy and gay. They were all watching the television screen.

"I see Fred hasn't come up yet," Gus said. "I guess he knows he can take his time now."

Miss Pickerell hoped the other salvage company was going to be reasonable about letting her take possession of her rock collection, after they had salvaged it.

Mr. Dukas's decompression period came to an end at the same moment that the submarine silently surfaced beside the barge.

Two sailors climbed out, and saluted as Commander Bushnell followed them up to the deck.

Commander Bushnell looked across at Miss Pickerell. He put his arms akimbo, and he said sarcastically, "Sometimes I wonder if even governors don't make mistakes! Somebody has been trying to sabotage us. Somebody has been trying to distract us under the water by banging on our submarine. And where it happened was right down here below where you and your partners have your salvage barge. What do you have to say for yourself?"

"See here!" Mr. Dukas boomed, clumping across the deck in his heavy suit. Gus had just unfastened his helmet and helped him up. "You can't talk to my partner like that! Do you know what would have happened if she hadn't banged on your submarine! You would have cut my air hose. You would have drowned me!"

Commander Bushnell turned pale.

"You mean—Oh, my goodness!" He turned to one of the sailors. "Send Covington here!"

"Is Covington still being restricted?" Miss Pickerell asked. "Just because he was a little bit careless?"

"He isn't *still* being restricted," Commander Bushnell said. "He's being restricted *again*—because I thought he had made an error in judgment. A submarine can't afford to have anybody make an error in judgment. That's even more serious than being careless. Oh, here you are, Covington!"

Covington and the other sailor came up out of the hole and saluted.

"You were perfectly right, Covington," Commander Bushnell said, "when you said you thought someone was trying to warn us of danger by banging on the submarine. I was the one who made an error in judgment, because I thought it was someone trying to sabotage us. I shouldn't have said what I did."

"That's quite all right, sir," Covington said.

There was a shout from the other barge. Everybody turned to look.

"That's Fred," Mr. Dukas said, as the diver came up in the water. He had taken out his mouthpiece so he could shout, and he held something up in his hand and threw it onto the other barge.

"Well, that does it," Mr. Dukas said gloomily. "They beat us to it after all. That entitles them to salvage the ship and get the salvage award."

Gus was biting his thumbnail and looking at Miss Pickerell.

"Mr. Dukas," he said, "may I ask Miss Pickerell something?"

"Why not?" said Mr. Dukas.

"Miss Pickerell," Gus said, "it's funny, but I can't remember about that watch you're wearing. I'm almost positive you didn't have it on when I told you to put on Fred's waterproof watch."

"Oh, mercy!" Miss Pickerell said. "I forgot all about it. I expect it belongs to the carpenter. He told me he had lost his watch on the ship when it went down and he wanted me to—"

"Hey!" Mr. Dukas said. "Did you get this on the *Liberty Bell*? When you were down there just now?"

Miss Pickerell began to take off the watch. "Yes," she said. "Maybe you'd better shout over to the other barge and tell them, so the carpenter won't keep worrying about it."

She was sure they would be able to hear Mr. Dukas's booming voice quite clearly.

"I'll shout all right!" Mr. Dukas exclaimed. "But it isn't going to make them stop worrying. Don't you realize what this means! Don't you know that the *Liberty Bell* was completely insured—even personal possessions of the passengers! You came up first. You brought this up from the ship before Fred came up. You've established our right to salvage the cargo and get the salvage award!"

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# CHAPTER SIXTEEN

## The Sunken Ship Is Salvaged

"Congratulations, Miss Pickerell!" Commander Bushnell said. "If there's ever anything I can do—"

Miss Pickerell had just thought of something. It was the watch that reminded her. She had promised to call her nieces and nephews at her home two hours after the last time she called. It was now long past that time. They would be dreadfully worried.

"Do you suppose—" she asked. "Would it be possible for you to get a message to my nieces and nephews?" And she told the commander what the matter was.

Commander Bushnell said he certainly would, and Miss Pickerell knew her nieces and nephews would be thrilled to be talking by long-distance to somebody on a submarine.

When Miss Pickerell's rock collection had finally been salvaged and dried off, she found that not one of the rocks had been damaged by being under water.

When she got them home again, the governor asked her if she wouldn't be willing to let them be exhibited in Square Toe City. He said, "They've been exhibited at the state fair, and they've been exhibited in Europe. Now I think they ought to be exhibited in Square Toe City. I'll make all the arrangements."

The governor had also made all the arrangements with the insurance company so that they wouldn't sell Miss Pickerell's rock collection to anyone else. As soon as the insurance company understood about the collection, they sold another part of the cargo to get the money for the salvage award, and they allowed Miss Pickerell to keep her rocks instead of taking the insurance money to which she was entitled.

It was quite a while before the exhibit could be held because Miss Pickerell and her nieces and nephews were so busy exploring the shipwreck and helping with the rest of the salvage. Miss Pickerell ordered eight sets of breathing apparatus, in various sizes, so that they could all go down together, and they all thought that that was the very nicest thing Miss Pickerell had ever done for them.

And Commander Bushnell allowed Covington to invite them all on board the atomic-powered submarine.

It was something that Miss Pickerell's oldest nephew said that gave her the best idea of all. He said he wished they could make an underwater movie, like the one they had seen in the Square Toe City Picture Show.

The photographer had just had his last swimming lesson, and Covington was coming home for a week's vacation from the Navy and would be able to take care of his animals himself. So the photographer was very happy to bring his underwater movie camera to Cliffside Bay. He soon mastered the use of an underwater breathing apparatus, and he took so many interesting and exciting scenes that when the film was all put together, it made a very thrilling moving picture.

Some of the scenes had Miss Pickerell's nieces and nephews in them. And some of them showed Gus, in his diving suit, salvaging the cargo. Miss Pickerell herself appeared several times.

The photographer was so grateful to Mr. Dukas and Gus for allowing him to use the salvage barge as his headquarters that he taught them both to swim, and in the years to come they both became very accomplished skin divers.

With her share of the salvage award, Miss Pickerell bought an underwater television camera for the Dukas Salvage Company, which was a great convenience to them in their work.

When the governor saw the movie for the first time, he said he thought it was one of the best moving pictures he had ever seen.

He arranged to have it shown, one night, in the Square Toe City Picture Show, instead of the regular movie. Everyone was invited to come a little early, so that they could see Miss Pickerell's famous rock collection from Mars, which was on display at one end of the lobby.

Miss Pickerell and her nieces and nephews were the first to arrive.

Miss Pickerell parked her car across the street from the picture show, so that her cow, in her little red trailer, would have a good place to see everyone who came.

Mr. Thread was already in the ticket window, and he smiled and nodded as Miss Pickerell, with her nieces and nephews around her, crossed the street and came toward him.

There was a large colored poster beside the ticket window, and when Miss Pickerell saw what was on the poster, she stopped right in the middle of the sidewalk, and said, "Forevermore!"

The poster showed the sunken *Liberty Bell*, with Gus salvaging it, and Miss Pickerell and her nieces and nephews helping. Covington's submarine was in the background. Miss Pickerell's name was on the poster. And so were the names of her nieces and nephews—all seven of them.

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## ***About the Author and Artist***

Ellen MacGregor was born in Baltimore, Maryland, but her family moved to the West Coast, and she went to schools in Garfield and Kent, Washington, and received a degree in library science from the University of Washington. Since then, her work in the library field has taken her to many places, including Wyoming, California, Idaho, Florida, Oregon, Hawaii, and Illinois. She has many friends everywhere in the library field.

Readers of this book, *Miss Pickerell Goes Undersea*, will also want to read the other books about Miss Pickerell, *Miss Pickerell Goes to Mars*, *Miss Pickerell and the Geiger Counter*, *Miss Pickerell Goes to the Arctic*, and *Miss Pickerell on the Moon* by Ellen MacGregor and Dora Pantell.

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Paul Galdone has been extremely well known in the adult book world for a long time, and recently has won special attention in the children's book field for the liveliness and humor of his drawings. Among his many and varied illustrations for children's books are the Miss Pickerell books and two books developed through the Hayden Planetarium, *Rocket Away!* and *Star of Wonder*. He and his family live in New City, New York.

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### ***Also by Ellen MacGregor***

MISS PICKERELL GOES TO MARS  
MISS PICKERELL AND THE GEIGER COUNTER  
MISS PICKERELL GOES TO THE ARCTIC

### ***and with Dora Pantell***

MISS PICKERELL ON THE MOON

#### Transcriber's Note

page 14 the en-enlargement to be ==> the enlargement to be

[The end of *Miss Pickerell Goes Undersea* by Ellen MacGregor]