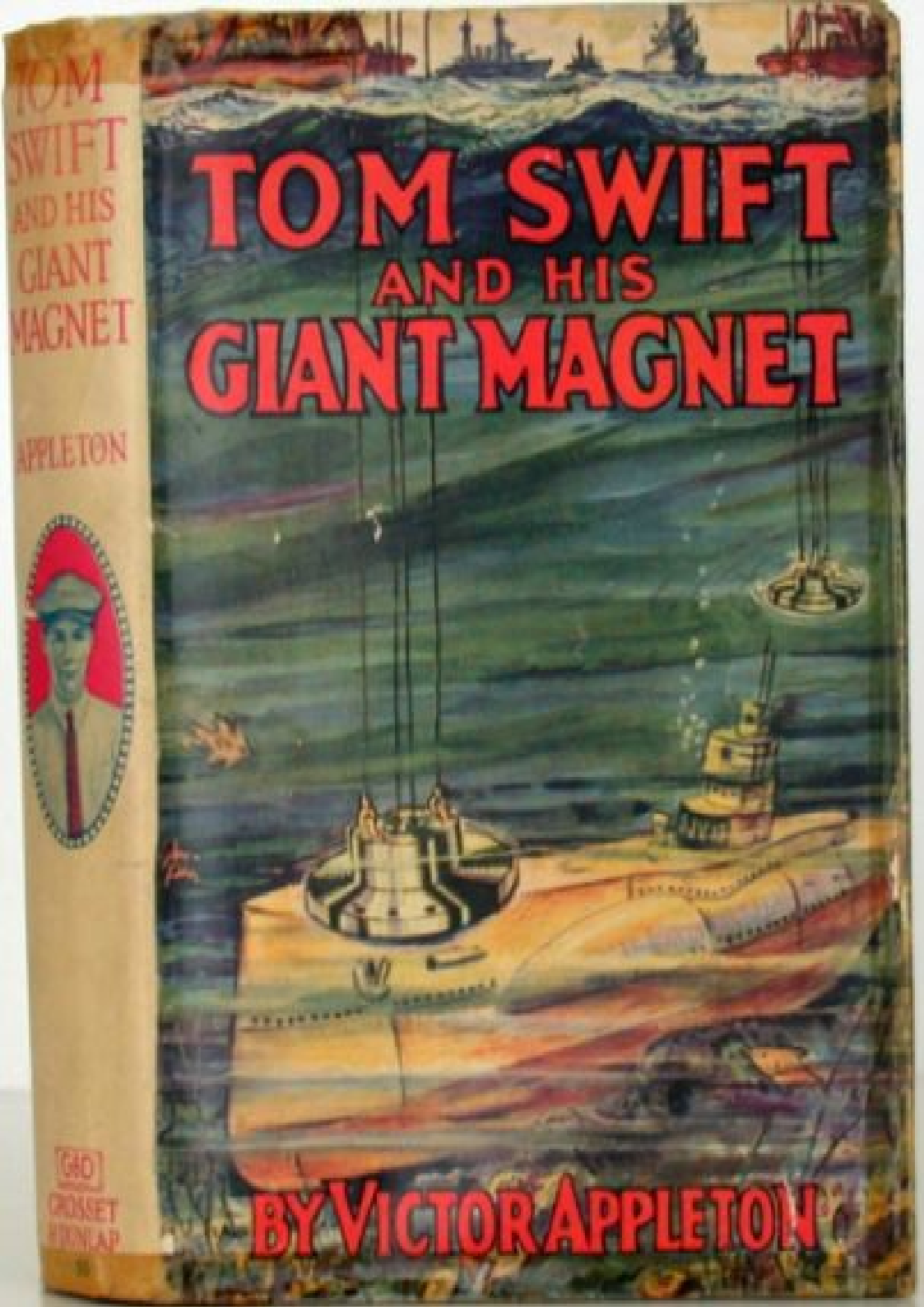
TOM SWIFT AND HIS GIANT MAGNET
BY VICTOR APPLETON
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APPLETON
GROSSET DUNLAP

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VICTOR APPLETON

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TOM SWIFT
AND HIS GIANT MAGNET

CHAPTER I

MYSTERIOUS FORCES

Walking along a country road was an elderly gentleman, jauntily swinging a walking stick. He seemed in a hurry to get somewhere and evidently he anticipated a pleasant meeting at the end of his journey, for he smiled and murmured:

"I'll be glad to see him again! It's been a long time."

Hurrying along another road, which intersected, at right angles, the thoroughfare occupied by the elderly gentleman with the walking stick, was a young man. He, too, seemed to expect a happy reunion with someone, for he could be heard to exclaim:

"I wonder what his object was in keeping me away so long? I suppose it's some new invention that will startle the world. But I'll be glad to see him again."

Thus it would appear that the young man and the elderly man had some object in common, as, indeed, they had.

It is a well known fact that two persons pursuing courses which, if prolonged, tend to intersect at right angles, will eventually meet. Swinging around a clump of trees at the juncture of the two roads, the elderly man nearly collided with the young fellow.

"Bless my shoe horn, Ned Newton!" exclaimed the carrier of the walking stick. "Where are you going?"

"Well, I wasn't intending to run into you this way, Mr. Damon," answered Ned with a laugh.

“Nor I, you, but I’m glad we have met. Where are you going, I mean, are you headed for?”

“Tom Swift’s, of course,” Ned broke in. “And I can guess you are headed for the same place, aren’t you?”

“I am. Last night I received a note from him, saying that he would be glad to see me this morning, and I lost no time in starting out, though I had to slip away with only half a breakfast to avoid taking my wife on a shopping trip.”

“That’s nearly my story,” and Ned laughed again. “Not that I had to slip away, though. Tom seems eager to have us call.”

“He surely does. It’s no wonder, since he put a ban on us visiting him, or communicating with him, nearly three weeks ago,” Mr. Damon said. “Now the quarantine is over and I suppose he wants company. I’d say he had been working on some new invention, wouldn’t you, Ned?”

“My idea exactly. He explained to me that he wanted to be absolutely alone and unhampered while he was working out a problem, and now, I imagine, he has solved it. I wonder what it can be this time?”

“I’m eager to learn,” went on the man with the walking stick. “So suppose we hurry to his shop and find out.”

“Come on!” invited Ned. “I hope whatever Tom Swift has been working on is a success.”

“It must be or he wouldn’t invite us to call,” argued Mr. Damon. “His note to me was anything but gloomy.”

“Mine was written in a jolly mood, so from that I deduce that he has gained his objective. Well, we’ll soon know. It isn’t far now.”

The two turned from the point of meeting and pursued their way along another and less used, road that led to the plant of the Swift Construction Company, the buildings of which occupied a large area of ground on the outskirts of Shopton. Mr. Damon and Ned were soon walking rapidly down a private lane that would take them directly to the building where Tom had his personal laboratory and office, detached from the other manufacturing shops, foundries, and pattern rooms.

“How do you like my new walking stick, Ned?” asked Mr. Damon as they neared Tom’s laboratory. He held it out for inspection and Ned took it in his hands.

“Why, it’s steel!” the young man exclaimed in some surprise.

“Yes, it’s the newest thing. Hollow steel, light but strong. I used to carry a wooden stick but I broke two or three swishing at vicious dogs who seemed to want samples of my legs. So the other day I got this steel stick. It’s guaranteed

not to bend or break when used on an ugly canine. I haven't tried it yet, but—bless my handkerchief! Did you see that, Ned?"

A strange thing had happened. They were now close to Tom's private workshop. Mr. Damon took back the steel walking stick from his companion, but no sooner had he taken it in his hands than it was snatched from them by some mysterious force. It went flying through the air and a moment later landed with a metallic bang against the side of the shop. There it remained, clinging like a dead leaf held against a wire fence by the wind.

"That's queer!" Ned murmured. "Why did you throw your stick like that, Mr. Damon?"

"I didn't throw it!"

"You didn't?"

"No. You must have given it a flip, or twist, as you handed it back to me, and being of flexible steel it sprang away from me. Or rather, it was fairly pulled out of my hands."

"I gave it no flip, or twist," Ned protested. "I just handed it to you."

"And the next moment it was snatched away as if someone had grabbed it from me," said Mr. Damon. "Bless my rain-coat, Ned, but there is something uncanny about this! See how my walking stick clings to the side of Tom's shop as if it were glued there. How do you account for that?"

For a moment Ned Newton did not answer. He looked from Mr. Damon to the stick held against the wall of the renowned young inventor's laboratory. Then Ned glanced back at the eccentric man. If he suspected the latter of playing a trick he was disabused of that idea as he saw the serious look on his companion's face.

"How do you account for it?" asked Mr. Damon again.

"I can't account for it," answered Ned in a low voice. "It must be something new in forces—something I've never had anything to do with before. I wonder if Tom——"

While he was speaking he and Mr. Damon saw a veritable giant of a man coming from a small building not far from Tom's private shop. This giant carried a large piece of metal, and from the ease with which he held it, there could be no doubt of his great strength.

"Look at Koku!" cried Ned, not finishing the sentence he had begun in which he had mentioned Tom's name. "Look at Koku!"

He pointed to the giant who appeared to be in some strange distress, or at least fighting against unseen but powerful forces. Koku seemed to be pulled along the ground against his will, for Ned and Mr. Damon noted that he was

now bending *back* as a diver leans *forward* to make headway along the ocean bed against a powerful current.

"Koku!" called Mr. Damon. "What's the matter?"

"Somebody grab hold Koku—no can see—no can feel—but somebody pull Koku!" boomed the giant in his powerful voice which matched his physique. "Somebody want this iron but Koku no let go. Master Tom he say bring iron to um an' Koku bring!" he panted desperately.

Looking at Tom Swift's giant helper with mingled wonder and fear, Mr. Damon and Ned beheld a remarkable scene. The unseen, strange force, exerting itself against the iron, was sliding the big man along as if he were being pulled by a rope about his waist. Desperately he clung to his burden, clasping his big arms and hands about it, and he was being carried along with it. He leaned back at an angle which would have toppled him over had not the force in front of him been exerted in an opposite direction.

"Look! Look!" cried Ned, pointing. "Koku is being pulled along like a baseball runner sliding for the home plate!"

This was indeed the case, for now, as the giant was nearer Tom Swift's private shop, the big feet of Koku plowed furrows in the soft earth, so great was his resistance to the power pulling him.

"No let go! No let go!" roared Koku.

A moment later he was banged against the side of the building and held there, as was also Mr. Damon's steel cane. Rather, the iron that Koku carried was held against the building and, since he obstinately would not let go, he was in the same predicament himself, being, as it were, part and parcel of the iron object.

"What does it mean?" murmured Mr. Damon, and there was fear and wonder in his voice.

"There's something wrong here!" exclaimed Ned. "I hope nothing has happened to Tom Swift!"

"What *could* happen to him?" demanded Mr. Damon. "Didn't he write us notes, inviting us to call this morning after nearly a month during which he shut himself up, almost alone, in his laboratory? If anything had happened to him he couldn't have written those notes."

"Those notes were written yesterday," went on Ned in a low voice. "Nearly twenty-four hours ago. Much could happen in that time."

"What do you mean—happen?" asked Mr. Damon, obviously worried. "Who would do anything to Tom Swift?"

"He has many enemies," went on Ned. "And I don't like this

demonstration of mysterious forces that we have witnessed. If someone has got into Tom's laboratory, and has Tom in his power, he may have turned the new invention against him and against us. I think it was to view his latest invention that Tom invited us to call and see him."

"I think so myself," agreed Mr. Damon. "This is a strange reception."

"Strange and mysterious," said Ned as he and his friend continued to gaze at the struggling Koku, held, with the big piece of metal, against the side of the shop, as was Mr. Damon's walking stick. "There is only one thing to do, Mr. Damon."

"What's that, Ned?"

"We must go in and see what's wrong. Come on!"

Ned started toward the shop. He had not taken more than a dozen steps, followed at a little distance by the eccentric man, when Ned uttered a cry.

"What's the matter?" shouted Mr. Damon. "Bless my shoe laces! What's the matter?"

For answer Ned pointed to a ragged hole in his trousers. It was newly torn, for the shredded edges of the cloth still fluttered from the force that had parted them. Then Ned pointed to a small object that had landed with a bang against the side of the shop.

"My pocket knife!" he gasped. "That same mysterious force pulled it right through the side of my pants!"

"This is terrifying!" cried Mr. Damon. "Oh, there goes my money!" he yelled, as several holes suddenly appeared in his trousers and dimes, quarters and pennies flattened themselves against the side of the shop, rattling like hail stones.

"Look! Look!" gasped Ned, and as he pointed they saw the money, the pocket knife, the steel walking stick and the big piece of metal machinery suddenly fall to the ground. Then Koku, who had been vainly exerting his strength against the unseen force, was likewise seen to fall. Whatever it was, the mysterious force was no longer operating and the objects it had taken to itself now fell by the natural pull of the earth's gravity.

"Tom! Tom Swift!" yelled Ned in desperation. "What does it mean?"

CHAPTER II

TOM SWIFT'S INVENTION

Ned Newton's call to Tom Swift was answered an instant after it was uttered by the appearance of the young inventor himself in the doorway of his private shop.

"Tom! Tom!" cried Ned again. "What does it mean?"

"Yes!" gasped Mr. Damon. "Explain!"

"Explain what?" demanded Tom, smiling at his friends.

"That!" answered Ned, pointing to the scattered money, his knife, the steel cane, the piece of machinery and Koku, all on the ground at the foot of the east wall of Tom's shop. That is, Koku had been on the ground, but he was now getting up. "What does it mean, Tom?"

"Oh, that," and Tom smiled again. "Well, I'm sorry this happened. I didn't know you were so near or I shouldn't have started it."

"Started what?" asked Ned.

"My new invention. I hope it did you no harm. It's powerful, I know, even in its present form, but——"

"No harm!" exclaimed Mr. Damon. "Look at that!" He pointed to the holes in his trousers through which his coins had been forcibly pulled to snap against the wooden side of Tom's shop.

"And see here!" went on Ned, indicating the large, single hole through which his knife had left him.

"Sorry," Tom Swift murmured. "I had no idea—but what's the matter with you, Koku?" he asked as the giant, with a bewildered look on his face, walked toward the piece of machinery.

"Koku not let go," was the only answer. "Then um get bumped!"

"I'm sorry," said Tom again. "I had no idea anyone was within the zone of its pull."

"What in the world is this mysterious force, Tom?" demanded Ned.

"Come inside," invited the chief owner of the Shopton works, "and I'll

explain it and show it to you. This is my latest invention."

Now, while Ned and Mr. Damon are going into the shop with Tom Swift, will probably be the best opportunity of introducing new readers to the hero of this series of stories.

Tom Swift was an inventor of world-wide reputation. Starting in a humble way with his father, Barton Swift, who in his day was noted, Tom had advanced into the foremost ranks. His father was now old and feeble and Tom had assumed the burden of the Works.

The first volume of this series is called "Tom Swift and His Motorcycle," and it was after he had purchased from Mr. Wakefield Damon a machine which tried to run that eccentric man up a tree, that Tom began his career. Mr. Damon, disgusted with his mishap, sold Tom the motorcycle for a low price. Tom repaired it and had some wonderful adventures with it. Then began his inventive work and in subsequent volumes his career is detailed fully.

In motor boats, airships, submarines and war tanks, making, with the help of his father, these machines in his own shop, Tom began to attract notice in scientific circles. His wizard camera, his photo-telephone, his big dirigible brought him much fame. It was on his trip in an airship to a distant land that Tom found Koku, the giant, and brought him back to Shopton, the town where Tom had lived with his widowed father and Mrs. Baggert, the housekeeper. Shopton was inland, on the shore of Lake Carlopa. Another member of the Swift household was Eradicate Sampson, an aged Negro, as devoted to Tom as was Koku, and between these two servants existed bitter rivalry because of this same devotion. Peace was usually restored by young Mrs. Tom Swift, who had joined the family some little time before.

Ned Newton, a Shopton youth whose friendship Tom had held since their early days, was now general manager of the Works. He helped Tom in many ways, as did Garrett Jackson, the shop manager. Mr. Swift was now too old to do very much, but his valuable advice was often sought by his devoted son.

The book immediately preceding this one is entitled "Tom Swift and His Sky Train," and relates how Tom evolved the idea of a string of glider cars, or motorless airplanes, to be hauled along through the sky by a powerful airship, much in the same manner as a land locomotive hauls Pullmans and day coaches. The separate gliders could be picked up in mid-air or released from the hauling plane by means of clever devices invented by Tom. Perfecting his sky train, Tom and his friends had many perilous adventures aboard, and by winning a sensational race Tom greatly bettered his own fortunes.

Following the completion of the sky train, Tom rested. Then he went into seclusion, sending word that he could not see even his closest friends, Mr.

Damon and Ned Newton. Though they wondered at this, they knew Tom well enough to feel sure he had good reasons for his strange actions.

Then the period of seclusion came to an end when the two friends received word to call at Tom's shop on a certain day. It was taken to mean that he had finished work on something important, and the calls of Ned and Mr. Damon (with his blessings) had been punctuated in the strange manner that has been noted—a demonstration of a mysterious force.

"There she is, gentlemen!" exclaimed Tom, pointing to a queer-appearing machine in the middle of his big, experimental room. It was attached to a whirling dynamo, the purr and hum of which was in evidence, though a disconnected switch between the dynamo and the machine proper seemed to indicate that the power had been cut off temporarily. What looked to be the main part of the machine was a shiny metal disk pointing toward the east wall of the room.

"She works!" cried Tom enthusiastically. "I invited you here, gentlemen, after a secluded period of hard work, to tell you that she works!"

"I'll say she does!" murmured Ned, looking ruefully at the hole in his trousers through which his knife had escaped. "She works only too well."

"Never mind," Tom chuckled, "I'll buy you a new pair of pants."

"Don't take the price out of my salary," begged Ned.

"I won't," Tom promised. "But I'm tickled pink! She works!"

"Was it that," asked Mr. Damon, pointing to the machine with its polished disk, "which pulled my metal cane out of my hands?"

"I rather think it was," Tom answered with a smile. "Pulling is one of the best things my new invention does."

"And did it pull my money through my trousers?" Mr. Damon went on, looking at several holes.

"Oh, golly!" chuckled Tom. "I see I'll have to get you some new pants, also."

"You'll have to, Tom, if you don't want my wife over here after you," went on the eccentric man. "She's very fussy about my clothes."

"Don't worry," said the young inventor. Then up spoke Koku:

"Master," he asked, "did um knock Koku down an' try take iron Master told me bring um?"

"Yes, Koku," replied Tom, "my giant magnet was responsible for all that happened in the last few minutes. As I said," he went on, "I'm sorry, gentlemen, it inconvenienced you so much, and if I had had any idea you were

so near, I should not have turned on the power. But I'm glad it was no worse. Koku seems to have got the worst of it."

"You should have seen him being dragged along with that metal contraption he carried," remarked Mr. Damon.

"He would have been all right if he had let go, I suppose," Ned said, knowing something about magnets.

"Koku no let go!" spoke the giant obstinately. "Maybe um black Rad he let go, but not Koku!"

"I guess that was the trouble," Tom said. "Well, it was one of the best demonstrations I could ask for, besides the official tests I made on the scale machine," he said, indicating an apparatus connected with the new device. "It shows that my giant magnet will work."

"Is that what you call it?" asked Ned, walking curiously about the apparatus.

"Yes. Giant magnet. Don't you think it's a good name?"

"It might be if the magnet was bigger," Ned replied. "But I don't consider that anything like a giant," and he indicated the polished disk.

"Oh," answered Tom, "I see. Well, this is only a small working model. Now that I have proved that my principle is right, I am going ahead and build a magnet that really will be a giant. Not so much in size, perhaps, because if it were too big it would be awkward to handle. But a giant in force."

"What's the object of it all?" asked Mr. Damon. "I mean, will it have any practical use, Tom? I suppose I needn't have asked that. But a magnet is nothing new. I used to play with a small one when I was a boy. And more than once, in railroad yards, I have seen crane magnets picking up and loading into trucks big bunches of scrap metal and pig iron. So if you have invited us here just to show us an ordinary electric magnet, why——"

"This can't be an *ordinary* magnet!" broke in Ned. "The demonstration Tom unconsciously staged for us and Koku," he went on, "proves that." He glanced at the hole in his trousers. "I've seen those railroad yard magnets, Mr. Damon. They are powerful, but, though I have been close to them, none of them ever pulled my knife out of my pocket before."

"No, come to think of it, and they didn't pick my pockets of all the coins I had," admitted the odd man. "Bless my shirt studs, Tom, there must be something different about this magnet of yours."

"There is. As I said, it won't be so much of a giant in size when it's completed, as it will be in power and force. As you witnessed, even this small model exerted a terrific power at a distance. It pulled your cane away from

you, Mr. Damon, and it bested Koku who tried to hold back with the piece of metal he carried. That will be nothing to what my completed machine will do. It will not be small in size, either, compared to other electro-magnets. It will be the biggest and most powerful magnet on earth. Of course, if you are looking for something the size of a dirigible, you'll be disappointed. It's the *power*, and not so much the *size*, that I'm banking on."

"Will you be able to make any practical use of it?" asked Ned, whose duty it was to look after the financial interests of the Swift concern. "The magnets used in railroad yards seem to do their work satisfactorily. Why invent a new one?"

"There are several reasons," Tom said. "If I won't bore you, I'll tell you a little something about magnets, though you may know it already. Of course, I need not tell you that there are two principal styles, or kinds, of magnets, permanent and electro. A permanent magnet may be a straight piece of metal, or one bent like a horseshoe. One end, or pole, is negative, the other positive. These magnets are made of steel and are more or less permanently magnetized by means of an electric current. You can magnetize an ordinary sewing needle by rubbing it on a horseshoe magnet.

"These permanent magnets are usually small and weak in pull, though I'm inclined to think that if one were made large enough, it would be very powerful.

"The other sort of magnet," Tom went on, "is termed electric. It consists, generally, of a core of soft iron about which is wound many layers of insulated wire. When an electric current of the right sort is sent through the wire the soft iron core is magnetized and will attract, and hold, other pieces of metal as long as the current is kept up. As soon as the current is shut off the iron core loses its magnetic force."

"Then I take it," Ned remarked, "that this model magnet of yours is an electric one."

"It is," Tom said. "If I had not shut off the current, your knife, Ned, your money and your cane, Mr. Damon, and Koku, as long as he clung to the piece of machinery, would still be plastered to my shop wall."

"Then I'm glad you turned off the current, bless my string beans!" exclaimed Mr. Damon.

"So am I!" Tom said with a laugh. "Well, that, in general, is the history of magnets. A common example of the electric magnet is the one inside your telephone box. That small magnet as well as the magnets of the telegraph machine and the electric bell (whose little cores of soft iron become magnetized and demagnetized by rapid impulses of a make and break electric

circuit) cause the bells to tingle and make the telegraph sounder click."

"Well," remarked Ned, "I hope you didn't invent this giant magnet just to ring a doorbell."

"Indeed I didn't," Tom answered. "My giant magnet is the newest thing in its line. Instead of a core of solid iron I am using a combination of hollow segments so that my completed machine, while large in size and a giant in strength, will be of comparatively little weight. In fact, it was the need of a powerful magnet, yet one light in weight, that caused me to invent mine. It came about when I was approached by the head of a scrap metal concern, and, as a matter of fact, I'm making this magnet on his order. If it succeeds, when I make the practical model, I'll be able to——"

Tom was interrupted by the tinkle of the telephone bell. He talked for a moment, his questions and answers being crisp and sharp, and then he exclaimed:

"No! It can't be done! I refuse to have anything to do with it. You can take that or leave it!"

With an appearance of anger on his face Tom Swift hung up.

CHAPTER III

A SUBMARINE VISITOR

"What was that?" asked Ned, with the interest of an old friend. This he was, as well as manager of the Works.

"He was a stranger to me," Tom said, "though he identified himself as Joseph Harburg. A man used to having his own way, I judge by what he said to me."

"What did he want?" asked Ned, as Mr. Damon walked around the model magnet, trying to solve some of its intricacies, while Koku, having left the piece of machinery that had made him so uncomfortable, went out.

"He wanted to horn in on my magnet invention," Tom replied.

"Horn in?" repeated Ned, well knowing what Tom meant by this expression. "Why, he didn't help invent it, did he?"

"Not in a thousand years!" exclaimed Tom Swift. "But I may as well set you right on this, Ned, for from the way Harburg talked he is going to make trouble."

"Trouble?"

"Legal trouble, I mean. He talks of an injunction and all that."

"An injunction against you getting out this invention of your giant magnet, do you mean?"

"Not that, exactly, no, Ned. But here's the story. I told you I got the idea of a light weight, but immense and powerful electric magnet from a scrap iron man. This man is Franklin Parlet. He lives in town. His firm is in the business of buying scrap iron and other metal from old auto junk yards, foundries, machine shops and the like. The scrap is shipped to his main storage yard and warehouse sheds in gondola freight cars—that is, cars that are not enclosed.

"Now, Mr. Parlet has been in the habit of unloading this scrap iron from the gondolas to his trucks by means of an electric magnet crane or derrick in the railroad yard. This electric magnet crane, while powerful, can pick up only a limited quantity of scrap at a time. One reason is that the scrap is of various shapes, sizes and weights. If you have ever seen one of these magnetic cranes

work, you know it looks like a derrick picking up a lot of giant jack-straws.

"So Parlet came to me and asked if I could invent an electric magnet, working on a derrick-crane principle, that would pick up bigger loads of scrap iron at each operation. If I could, he said he would help finance the manufacture of such cranes, installing one in the railroad yard here and selling others to various scrap metal concerns for good sums, or, better still, renting them. He figured if I could make a magnet that would pick up twice as much scrap as the ones now in use he could save time in carting the stuff to his yard."

"So you invented the giant magnet one, two, three, just like that?" whimsically asked Ned.

"Well, not quite as easy as that," Tom replied with a smile. "I ran against several snags and I had hard work. That's why I went into seclusion. I wanted to devote my whole time to it. I have at last succeeded and now comes this bunch of trouble."

"You mean Harburg?" Ned inquired.

"Yes. That's the man. He didn't have nerve enough to come here and talk to me. Had to hide behind the telephone!" sneered Tom.

"What's his game?" asked Ned.

"He asks, or, rather, he *demands* that I let him share in the ownership of the rights to manufacture the giant magnets."

"What did he base his demand on?"

"For one thing, that he is also in the scrap metal and salvage business and that I have no right to favor one over another, meaning Parlet."

"But Parlet came to you first."

"Sure he did. That's what I told this man."

"What did he say to that?"

"He said he owned stock in Parlet's scrap metal company and if I didn't let him, meaning Harburg, in on the magnet deal he'd put the screws on Parlet, throw a lot of stock on the market, weaken the standing of the concern, then buy the stock back himself until he had a majority vote and could do as he pleased."

"Whew!" Ned whistled. "He seems to mean business!"

"I'm afraid so," admitted Tom.

"What can you do?"

"I don't know," Tom answered. "I suppose I'll have to notify Mr. Parlet and be advised by him. I guess there'll be a financial fight. I wish," Tom went

on wearily, for he had worked hard in the last few weeks, “I wish these business men would leave me out of that end of it. I don’t claim to be anything but an inventor.”

“But you’re a good one!” declared Ned.

“That’s neither here nor there,” said Tom. “It bothers me to have to go into all this hocus-pocus business about freezing out, getting control and all that. But I’m firm on one thing!” he exclaimed.

“What’s that?”

“I’m going to control this magnet myself. While I invented it, at Parlet’s request, I had a paper drawn up which gives me the sole control. I am obligated only to rent him or sell him a magnet under certain conditions. He has an option to purchase stock in a company I may form to make the machines, but this doesn’t include Harburg. That man will not dictate to me!”

“He tried that, did he?”

“He tried it, yes,” admitted Tom with a grim smile. “I told him where to get off. Though I don’t suppose he’ll get,” he added with a sigh. All this business detail annoyed him.

“You think he’s determined?” asked Ned.

“He seemed so. Threatened that I’d hear from him again and so would Parlet. Well, let him do his worst. He can’t take away from me the fact that I’ve invented the most powerful electro magnet on earth,” and Tom grinned more happily. “Soon I’ll build the real big one, patterned after this small model. Yes, Rad, what is it?” he asked as the old colored man shuffled into the room without knocking, a privilege he claimed because of long service.

“ ’Scuse me, Mas’r Tom,” said Rad in quavering tones, “but Missie Swift she done ask ef you can come an’ talk to her a minute.”

“Sure I’ll come, Rad. Right away. Excuse me,” Tom said to his callers.

“She has first call, always!” chuckled Ned. “Hop to it, old man.”

“Mary and Tom are an ideal married couple, aren’t they?” remarked Mr. Damon as Tom hurried to the house in answer to his wife’s summons.

“Indeed they are,” admitted Ned.

“Bless my rubber boots!” went on the odd man, “but that’s the way it should be in this world! I hope Tom always remains as happy as he is now,” he went on.

“Same here!” murmured Ned. “Say, he certainly has a great thing here,” he continued.

“Meaning the giant magnet?”

“Yes. I can already see other possibilities for it than hoisting big loads of mixed scrap iron off railroad cars.” Ned, being a young business man, began to speculate about the future.

Meanwhile Tom, having outdistanced aged Eradicate, was approaching the house where he lived with his young and pretty bride—the old Swift homestead.

“I wonder,” mused the young inventor, “how the news of my giant magnet leaked out? I wanted to keep it secret. That’s why I didn’t let even Ned or Mr. Damon call until I had it completed. Parlet was sworn to secrecy, and it was to his own interests not to mention it. Yet this Harburg knows about it almost as soon as I put the finishing touches to my model. There’s something wrong, somewhere.

“I hope,” mused on Tom, as he went up the steps, “that there is no leak in my own office and shop. I’ve had traitors enough around me. I don’t want any more. I’ll have to do some investigating, though.”

A young and pretty woman heard Tom’s footsteps on the porch and opened the door for him.

“You got my message, Tom?” she asked.

“Yes,” he replied. “Anything wrong, Mary?”

“No, something quite right, I should say. We have a submarine visitor.”

“A submarine visitor!” exclaimed Tom. “You don’t mean,” he went on, “that someone has launched a submarine in Lake Carlopa?”

“Not exactly,” laughed Mary. “The lake is hardly big enough for that, though I seem to remember, Tom, that you once ran a small model of your sub on the lake.”

“I did. But who is this visitor you speak of, and what does he want?”

“He’s my good-looking cousin, in the U. S. Navy,” answered Mary. “His name is Lieutenant Joseph Nestor and as for what he wants, I’ll let him tell you himself, for he only just now arrived. He says he is in trouble, so I sent for you in a hurry. Here, Joe!” she called.

A young Annapolis graduate came out on the porch, to greet Tom with a hand clasp and a smile as he said:

“I think I know more about you than you know about me, Mr. Swift. As long as I can remember, I have heard Mary talk about your great inventions. There is one, in particular, I’m interested in as it is in line with my own work. I’m hoping you can help us out.”

“I’ll do what I can,” Tom modestly said. “But with whom are you associated and what is the trouble?”

“I’m associated with Uncle Sam,” answered the lieutenant with a laugh, “and the trouble has to do with the under-sea telephone on the new big sub, the S.V.J. 13 to which I am assigned. I’m wondering if you can solve a puzzling problem for us?”

“I can’t promise, until I know what the trouble is,” Tom answered. “But you can rest assured, in advance, that I’ll be glad to do anything I can for you, and, of course, for Uncle Sam.”

“Well, I’ll tell you about it,” began the lieutenant, when there came a sudden interruption in the form of a man striding up the front path.

“Are you Tom Swift?” brusquely began the stranger, looking at the young lieutenant.

“I haven’t that honor,” was the answer. “There is Mr. Swift,” and the officer indicated the young man near whom Mary was standing.

“Oh, so you’re the inventor of the giant magnet, are you?” asked the man.

Tom started in surprise. His secret was becoming more widely known than he had dreamed and more than he cared about.

“Who are you?” Tom asked.

“I’m Joseph Harburg,” was the crisp answer. “I was talking with you on the telephone a little while ago and I’ve come in person to close the matter. I’d like to have a talk with you!”

CHAPTER IV

RIVAL BIDDERS

Tom Swift, in spite of his usual philosophical demeanor, could not restrain a feeling of resentment against Harburg. The man's manner was arrogant and domineering. He seemed to demand as a right that which others asked as a favor. Consequently, Tom mentally steeled himself against his unexpected caller and coldly said:

"I do not transact business at my home, especially when I have guests," and he indicated Lieutenant Nestor. "I seem to remember telling you, over the telephone, that I would have nothing to do with your proposition. I don't like the way you do business. You seem to have lost little time in getting here from New York," went on Tom. "It was only a few minutes ago that you said you were talking from New York. I have some pretty speedy airplanes," and Tom's smile was sarcastic, "but none that would make the trip from New York in the time that has elapsed since you called me."

"Look here, Mr. Swift," began Harburg, and there was a distinct change in his manner; it was somewhat apologetic. "I didn't mean to deceive you. As a matter of fact I was in Shopton when I called you up. I've been here several days waiting to get in touch with you but I couldn't make it. I think you may have misunderstood me. I may have said I was *from* New York for I have my offices there, and you may have thought I said I was *in* New York. I know you were pretty excited and——"

"I admit I was excited," Tom conceded, for he was fair, even to his enemies and those whom he did not like. "Your imperative demands were enough to excite anyone. It is possible that I may have misunderstood you. However, we will let that pass. The point is I don't do business outside my office and, more than that, I will have nothing to do with your proposition. I am committed to Mr. Parlet."

"See here, Mr. Swift," broke in Harburg, and he was pleading now, rather than insisting, "you've just got to let me in on this. I mean," he quickly shifted his words, "it will be to your interests to do so. I could force matters with Parlet, for it's true that I own much stock in his company. But I won't go to that end if I can help it. I want to make you a fair business proposition and it

will mean big money for you. Please listen to me."

The man's arrogant manner had so changed that Tom, in fairness, could but say:

"As a business man I suppose I ought to hear what you have to say, or at least let my manager, Mr. Newton, pass on it. That does not alter my rule that I will not discuss business here. You must come to my office if you have anything to say."

"I certainly have, and it will amaze you when I tell it," declared Harburg. "I have been trying, for the last week, to see you at your office, but when I was not turned away by an old Negro, I was chased away by a giant."

"Yes, Koku would be likely to chase you," chuckled Tom. "As a matter of fact, no one, except my wife, has been allowed to see me for more than a week. But I can't give you any further time. I have company," and again he indicated his wife's cousin.

"Then will you see me later—at your office?"

"I may—I won't promise. To be frank with you, I don't like the way you started to do business with me. I'm not in the habit of being *forced* to share my inventions with anyone."

"Perhaps I made a mistake, Mr. Swift," and Harburg's manner was now very apologetic. "But this is going to be a big thing for both of us if your giant magnet works as you hoped to make it."

"It works all right," was all Tom said.

"Good! Then I can assure both of us a fortune and it will not in the least interfere with Parlet's plans. He will work on the land and I will work on the sea."

This distinction puzzled Tom and aroused his curiosity.

"You may call at my office later," Tom said, indicating that the interview, which had got off to such a bad start, was at an end. "I will at least listen to your proposition. But I warn you that Mr. Parlet has first call on my giant magnet."

"That's all right. I'm sure we can work together," said the other as he turned away, bowing formally to Mary.

"Who is that man, Tom?" asked his wife as she accompanied her husband and cousin into the house.

"I don't know, any more than that his name is Joseph Harburg, that he is, so he says, associated in some way with Mr. Parlet and that he got me riled when he called me up a while ago and demanded, yes, actually *demanded*, that I sell him rights in my big magnet."

“I don’t like him,” Mary said.

“Neither do I,” agreed Tom. “But we are not in business for our likes or dislikes, my dear, and the Swift Construction Company can always use money. Since this fellow came down off his high horse, I will at least listen to his proposition about my giant magnet.”

“So that’s what you have been devoting your talents to of late, is it?” asked the lieutenant. “Mary was saying that you have hardly been in to get your meals for the last two weeks.”

“And as for taking me out,” pouted Mrs. Swift, “we haven’t even been to the movies.”

“I have been very busy,” Tom admitted. “I’m sorry if I neglected you, my dear,” he went on, taking his wife’s hand. “It was absolutely necessary for me to concentrate on my magnet and I did so, with the result that today, for the first time, I had a successful demonstration.” He laughed as he recalled the surprise of Ned, Mr. Damon and Koku.

“Is it something new in the line of magnets?”

“Somewhat,” Tom answered, and, briefly, he described his latest invention. “But what can I do for you and Uncle Sam?” he asked.

“I don’t suppose,” began Lieutenant Nestor, “that you have had time to pay much attention to what the government has been doing, lately, in the way of submarines.”

“No, I haven’t kept in close touch with them,” Tom admitted, “though at one time I was much interested and I built a sub of my own that did good work. I know marvelous improvements have been made since I built mine.”

“Yes, indeed. Well, to sum it up, the newest and largest of Uncle Sam’s submarines was recently launched. She is the S.V.J. 13 and I am lucky enough to have been assigned to her.”

“I should call thirteen unlucky,” interposed Mary.

“We don’t think of such things in the navy, though old sailors might,” her cousin said. “At any rate the S.V.J. 13, which is more a symbol of type than a name, has had her first trials and she behaved beautifully, diving deep and coming up easily. But we have had trouble with our under-sea telephone service. You know, besides surface and submerged dot and dash wireless, that we have a system by which we can communicate through the telephone with other subs and other ships in our unit while we are on the bottom or surface. This is of value in war time, in maneuvers, and, most of all, in case of an accident to us—if we should be submerged and unable to rise.”

“Oh, that would be dreadful—trapped at the bottom of the sea!” murmured

Mary.

"We don't expect that to happen," went on the lieutenant with a smile. "The S.V.J. 13 is equipped with all the latest devices and we have means of escaping to the surface in most emergencies. However, we might be trapped and then we would want to communicate with sister subs or other ships to direct a rescue. Unfortunately our under-sea 'phone seems to be faulty. I have been working on it—having made that a special study when at Annapolis, but I seem to have struck a snag. Not one of our other officers or mechanics has been any more successful than I in solving the problem. Then I happened to remember, Mr. Swift, that you had married my cousin, and that she once said you had a wireless telephone invention, a photo-telephone and several other communicating devices, so I decided to come and ask you to look our plant over and tell us what is wrong. Will you do it?"

Tom seemed to hesitate for a moment, but only for a moment. His wife and her cousin knew of what he was thinking—his giant magnet and the proposition Harburg was to make to offset the plans of Parlet. Then Tom Swift spoke and said:

"Of course I'll help you. Where is the submarine now?"

"At Harwich," was the answer, the lieutenant naming the nearest seaport to Shopton. It was not a seaport in the real meaning of the word, but a naval base up a large river that emptied into the sea, and deep enough for big vessels. It was about a day's journey from Shopton. "If you could pay us a visit, we'd be delighted to entertain you and give you a trip under water. The sub has not yet been officially accepted by the navy. She is, as yet, in the experimental stage. We want everything perfect before we take her over. Will you come?"

"Yes," Tom promised, "I will. Give me a few days to settle this new matter that has come up in regard to my magnet, and I'll see what I can do."

"Fine!" cried the officer. "That takes a load off my mind. I'll send a wire to the commander."

"Then settle down and visit," begged Mary. "I've heard nothing but technical talk since you arrived."

"I'm afraid that's so," agreed Tom. "If you'll excuse me, while I go back to the shop and lock up, I'll be with you."

A little later, having told Ned of the new developments, and having locked away his latest invention, posting Koku on guard, Tom Swift and his wife entertained her cousin.

It was two days after this, when the lieutenant had departed to rejoin his ship, that Tom was busy planning to make the first of the regular sized giant magnets, that Koku came in to announce:

“Bad mans to see you, Master.”

“Bad man?” queried Tom wonderingly.

“Yes. Bad mans Koku chase away much times,” and the giant so graphically described Harburg that Tom had no difficulty in recognizing his former visitor.

“Oh, well, let him come in,” said the inventor.

“You want Koku chase um, Koku chase,” offered the giant eagerly.

“No, you needn’t run him off the premises just yet,” Tom said with a laugh.

Thereupon Harburg came in, his manner quite different from his first attitude when he was at Tom’s house.

“Look here, Mr. Swift,” began the caller brusquely, “I’m a man of few words. I’ll put what I have to say in a little space. You have invented a powerful magnet. I need just such a piece of apparatus in my business. I’m willing to guarantee you one hundred thousand dollars if you will sell me a quarter interest in the invention. You may retain control, only let me have the under-sea rights.”

“The *under-sea* rights!” exclaimed Tom. “Why, I hadn’t thought of using my magnet in water work. In fact, it isn’t constructed for that.”

“Well, I have no doubt you can make it do that work if you want to. It is vital for me to have the use of your magnet. Come! What do you say—a hundred thousand dollars for a fourth interest?”

Before Tom could reply the door was pushed open and another man rushed in.

“Don’t listen to him, Mr. Swift!” he cried, the inventor recognizing the intruder as Parlet. “I have the first call on your giant magnet and I offer you two hundred thousand dollars for the exclusive rights in my business. Don’t listen to him!”

Tom gazed at the rival bidders wonderingly.

CHAPTER V

A STARTLING DEMONSTRATION

Turning their attention for the moment from Tom, Mr. Parlet and Mr. Harburg began an argument.

"Look here, Harburg," began the junk metal man, "I told you not to interfere in my business. I'm running this company."

"So you say. But I own considerable stock in it and I'm not going to risk losing it by having you make extravagant offers for a piece of machinery you haven't even seen tested."

"If you mean Tom Swift's giant magnet, I know it's a success!" exclaimed Parlet, "and I know it's worth two hundred thousand dollars to me and the company you own stock in. For that matter, how does it happen that you're willing to risk a hundred thousand if you've never seen the magnet work?"

"That's my business!" snapped the other.

Then Tom decided it was time he took a hand in the dispute.

"Look here!" he exclaimed. "I'm not accustomed to having my office used as a debating place for rival stockholders. My giant magnet is not for sale. I merely agreed, Mr. Parlet, to sell you certain rights to use for your junk metal. As for you, Mr. Harburg, all I said I would do was to listen to your proposition. I think I may be pardoned for asking how each of you came to know, in so short a time after I made my final tests on the model, that it was a success. How did the information get to you?"

Both men seemed confused and, after a pause, Parlet murmured:

"Well, the last time I heard from you, Mr. Swift, you said you had virtually completed the work and that the magnet would be a success for my purpose."

"Yes, I did tell you that," Tom admitted. "But I wasn't sure then. It is only a very short time ago that I was positive, after a test, and yet I find you both claim to know something I have told to only a few close friends. There must have been a leak somewhere."

"I'll tell you where I got my information," said Mr. Parlet. "It was from him!" and he pointed at Harburg. "He telephoned me that your magnet was a

big success and he demanded that I release my rights to him, since he is a big stockholder in my company. That part is true enough. I refused to be forced, so I decided to come here and see you personally, Mr. Swift. My dealings with you are regular, aren't they? You haven't switched to him, have you?"

"Yes, to your first question," Tom answered, "and no, to the second. But how did you hear that my tests were successful on the model magnet and that I could now go ahead and make a big one?" Tom demanded of Harburg.

The latter seemed confused and hesitated noticeably before he made answer. Then he murmured:

"Well, I—er—I heard about it."

"From whom?" insisted Tom.

"I—er—I'm not at liberty to tell," was the hesitant reply. "I want you to know, Mr. Swift, that my offer is open and above board. I admit I may have made a mistake in threatening Parlet, but I am very anxious to get the under-sea rights to your magnet."

"Under-sea rights!" cried Tom. "I haven't made my magnet to work under water."

"It can be made to do such work, can't it?" asked Harburg with an anxious air. "Much depends on that. In fact, that is my only object—to get a magnet, very powerful, that will raise objects from the bottom of the sea."

"What sort of objects?" asked Tom.

For a moment Harburg hesitated. Then, with an air of frankness, he said:

"I must make certain disclosures to you gentlemen, disclosures I hoped to keep secret for a while. If I do tell them to you, I must pledge you to silence."

"I refuse to be bound until I know more about it," Tom said. "I agree, in advance, not to use anything you may tell me."

"That's fair enough. Well, I have lately formed a company for salvaging bullion treasure and other objects from sunken wrecks. There are a number of very valuable wrecks lying along the Atlantic coast, in water that is too deep to work in because of the great pressure. Divers would be of no use in recovering this treasure. Your giant magnet might, if it can be operated under water."

"That I can't be sure of—just yet," Tom said.

"I'll make it worth your while to incorporate such changes in your plans as to guarantee that the magnet will work under water!" cried Harburg. "I know you can do it."

"Look here!" burst out Parlet. "Is that why you want a share in the Swift giant magnet, Harburg—to raise sunken treasure?"

“That’s all—yes.”

“You don’t intend to form a rival junk iron concern and use the magnet in unloading railroad cars?”

“Not at all. That’s small business in my estimation. I’m willing to let you run that end of it. You’ve been successful in the past, even with the old, clumsy form of railroad yard crane magnets, and you’ve kept dividends coming in to me and the other stockholders. I won’t interfere with your end of it if you let me purchase the under-sea rights.”

“I agree to that!” said Parlet with a quick look of relief.

“Then it’s all settled, Mr. Swift,” said Harburg, “and I’m sorry we had this discussion. Now, if you’ll draw up the papers——”

“Look here!” exclaimed Tom, glad that matters had been thus arranged, and seeing the possibility of more big business for his own company, “while I am virtually certain that my giant magnet will work on land, and lift bigger loads of junk than any magnet now in use, I am not at all certain that it will work beneath water.”

“Pooh! A mere matter of detail!” interposed Harburg, lightly. “I know enough of you by reputation, Mr. Swift, to be sure you can make changes that will insure your magnet working in the depths of the sea. I am willing to sign a contract with you now, to pay you, as I said, one hundred thousand dollars when the magnet is completed in working form, and I will also offer you a share in my profits. Do you accept?”

“Not until I prove to myself that I can so change my magnet as to make it work under water,” was the answer. “I know it will work on land, but water is another element.”

“Are you sure it will do the work I need it for, Mr. Swift?” asked the junk iron dealer.

“Yes,” said Tom. “I was going to send for you to give you a demonstration of the model. I can do that now if you like.”

“I’d like to see it!” exclaimed Mr. Parlet.

“May I also watch?” asked Harburg. “I might be able to judge, even by a land demonstration, whether or not it will do what I hope it will, when altered to plunge beneath the surface of the sea.”

“Yes,” Tom agreed, “I’ll let you witness the demonstration. We’ll take the model outside. But first we must remove all pieces of metal from our persons.”

Tom explained that later he intended to electrically insulate his apparatus, but, for the time being, he must take precautions.

“There is little danger unless one is in direct line with the magnetic disk,”

he said. “Its pull is greatest in straight lines at right angles to the plane of its surface.”

“Then it must have been that way when you pulled Mr. Damon’s cane away from him,” said Parlet, who had heard the story.

“Yes,” Tom Swift agreed. “I had my magnet pointing toward the wall of my laboratory, outside of which were my friends. I did not know they were there. However, there is no danger if you remove all metal from your clothes.”

This was done and everything was then in readiness.

Calling Koku and some of his workmen, Tom soon had the small but powerful magnet set up on a big auto truck outside his experimental shop. The dynamo could not be moved, but wires were extended from it to the magnet on the truck. In addition, a small derrick was provided and the magnet swung by wire cables from the movable boom so that, in a sense, it represented a railroad yard crane of the old-style magnetic type.

Tom had the truck run to a big pile of junk and scrap iron in the yard back of one of the machine shops, the wires trailing along the ground from the purring dynamo.

“This experiment,” Tom said when he was ready to demonstrate, “is, in a sense, one in proportion. You can see the size of this model,” he told Parlet, “and I will show you how much of a load it will raise. You can then calculate, with more or less accuracy, how much of a load the regular size magnet will lift from a gondola.”

“Yes, that’s comparatively easy to do,” agreed the junk man who was accustomed to calculating weights of large figures.

“All ready, Mr. Jackson?” asked Tom of his shop manager.

“Ready, Mr. Swift,” was the answer. “The current is on.”

Tom took his position on the truck at the switch controls. Koku was beside him to operate the derrick, which worked with a windlass arrangement, on electric power. The magnetic disk was to be lowered over a mixed mass of broken iron plates, bars, old heating apparatus and some scrapped autos with their engines. As soon as the disk touched this mass Tom would switch on the current. The soft iron segments inside the disk would at once become magnetized, and it would hold in its powerful grip a confused collection of scrap which could then be lifted and swung to one side by working the improvised derrick windlass. With the mass of junk clinging to the disk it could thus be swung over a waiting auto truck and, when the current was cut off, the disk, being no longer magnetized, would drop the load and be ready to pick up another.

“Well, gentlemen, watch!” warned Tom.

Koku swung the disk over the mass of junk iron. When it was near enough, and before it was in actual contact, Tom closed the switch. The disk became magnetized and then it seemed as if a quarter of the big pile of broken metal leaped up to cling to the attractive surface. Like iron filings clinging to a little horseshoe magnet, the mass of junk was lifted into the air as Koku operated the derrick windlass and swung it over to one side where, if there had been a truck to receive it, the junk could have been neatly and quickly dropped in.

“What do you think of that?” asked Tom, as, opening the switch, he demagnetized the disk and the mass of junk fell with a clatter to the ground.

“Great!” cried Parlet. “If your small model magnet will lift a load like that, what will the big one do?”

“Twenty times as much, at least, I hope,” Tom said. “That remains to be seen, of course, but I have no fear of the result. I’ll give you another demonstration.”

Once more the demagnetized disk was swung over the junk pile and again, as the current was turned on, it lifted to itself a greater mass of jagged iron. It was swung over to the theoretical truck and fell to the ground with a clatter.

“That was a bigger load than the first!” cried Harburg.

“Yes,” Tom admitted, “it was. I turned more power into the magnet.”

“Then it’s going to be just what I want!” cried the seeker of sea treasure. “I’m ready to sign a contract now.”

“This giant magnet, even in model form, exceeds my highest hopes!” almost shouted the enthusiastic Parlet. “I’ll also sign with you, Mr. Swift.”

“Well,” said the young inventor with a smile, “since your two forms of business don’t seem to conflict, I see no reason why I should not deal with both of you. That is, if you agree, Mr. Parlet,” he added, “for I gave you first call.”

“I’m willing to let Harburg have the water rights,” said the junk man.

“That’s all I want,” assented the sea salvager. “Parlet can have the land junk rights, especially as I’ll make a profit out of them also,” he added with a laugh.

For an instant Tom thought he detected a look of hate and fear directed by Parlet to the man who owned stock in the junk business. He gave it little thought at the time. Matters seemed to be working out to his advantage.

“I’ll make one more test,” Tom said, “and then we’ll talk business. I have yet to manufacture a full-sized magnet,” he added. “I do not guarantee,” he said to Harburg, “that I can make one that will work under water.”

“I’m sure you can,” the salvager of wrecks declared confidently.

Tom directed Koku to swing the derrick boom over the junk pile once more, and just then Eradicate came walking across the shop yard carrying a long iron pipe which the elder Mr. Swift had sent him to get.

Tom was discussing magnetic pulls and other technical matters with his two visitors, preparatory to turning on the electric current when he became aware of a cry of fear from the aged Negro.

“Massa Tom! Massa Tom! I’se bein’ carried up t’ de sky!” cried Rad.

Turning quickly to his apparatus Tom saw a strange demonstration of the power of his giant magnet. Eradicate, clinging to the iron pipe, was being pulled up off the earth and toward the shiny metal disk which happened to be pointed directly at him. In another instant the Negro was swinging from one end of the pipe, the other end of which was held against the magnetic disk.

“Who turned on that current?” cried Tom. “I didn’t touch the switch!”

He need not have asked, for a loud chuckle from Koku, standing beside him on the auto truck, was answer enough.

“Ha! Ha!” roared the giant. “Koku gib Rad free ride!”

Poor Eradicate, swinging between heaven and earth, was in a perilous position.

CHAPTER VI

ABOARD THE SUBMARINE

"Koku, you big rascal!" yelled Tom, "I've a good notion to send you back to giant land where I got you!"

This dreadful threat at once reduced the big man to child-like submission.

"Master no do dat!" he pleaded. "Koku only like fun with Rad. Koku let um down!"

The giant reached out his hand toward the switch. In another instant he would have pulled it, demagnetizing the disk and the Negro and the pipe would have fallen a considerable distance to the ground. Tom made a leap toward his giant helper, knocked aside his big hand just in time and cried:

"Don't do that! Do you want to kill poor Rad?"

"No, Master," answered the giant humbly, while the group of workmen, gathered about Parlet and Harburg, stood in terror of what might happen.

"Massa Tom! Massa Tom! Sabe me!" cried Eradicate who, clinging to the magnet-held pipe, was flinging his legs about like some big bug.

"I'll save you, Rad!" cried the inventor. "Hold fast! Get away, Koku!" he directed the giant. "I'll work the derrick. I can't trust you where Rad is concerned."

In another moment Tom had lowered the boom of the derrick so that Rad's swinging feet touched the ground. Then Tom called:

"Stand up, Rad, but keep hold of the pipe."

This the Negro did and then Tom gradually cut off the power. The disk was slowly demagnetized and Eradicate was freed from its powerful grip. As he staggered away with the pipe, the Negro shook a fist at Koku and muttered:

"I put fish in yo' food, dat's what I do! I make yo' all eat fish when yo' don't know it!"

"Oh, Master, no let him do dat!" begged the giant, for, strange as it may seem, he had a horror of fish, never eating it in any form, and even showing signs of fear if he saw specimens on ice in a dealer's shop window.

"It would serve you right if I did make you eat some fish," said Tom with a

severe air to his giant. “Let me catch you playing any more tricks like this on poor Rad and I will.”

“Master no catch me,” said Koku, a promise of which Tom did not gather the full significance then, as he was busy preparing for a final demonstration of his model magnet. On the last test, using all the available electric current, Tom pulled out a pile of junk larger than either of the former loads and the two rival bidders for rights in the machine declared themselves more than satisfied.

It was an easy matter for Tom to make a preliminary contract with Parlet for the junk rights, since it was now certain the inventor could make a big sized magnet that would unload the stuff at reduced cost.

It was not so easy, however, to make a deal with Harburg, though Tom admitted to Ned that it would be an advantage to do so.

“I can sell him the under-sea rights without losing anything of the land rights in my magnet,” Tom told Ned when the rivals had left and the model was back in the private shop.

“Why don’t you, then?” asked the manager.

“Well, I’m not certain that I can make that kind of a magnet from this model.”

“The only way to find out is to go ahead and do it,” Ned suggested.

“Yes, I suppose so,” Tom agreed. “I will. I’ll start Mr. Jackson and his men at work making a big land magnet and I’ll see if I can make another model that will operate under water. It will give us a double income, Ned.”

“Yes, and we need it.”

During the following days machinery was humming in the Swift plant. There was always more or less manufacturing work being done on Tom’s various inventions, but this new one now occupied his personal attention. Having set the wheels moving toward turning out the first, regular-sized land magnet, Tom now devoted his mind to making one that would operate under water. There were several new problems to be worked out, for water is a great theft of electricity and the least leak in the insulation of even the smallest wire would mean a loss of power, if not positive failure. Tom had to proceed cautiously, and he spent many nights alone in his laboratory working on the new under-sea model.

One night, when he had been laboring long past his usual time, his private telephone rang. He was rather startled by the sudden tinkle of the bell and paused a moment, not sure that the call was for him. As the bell rang again, he picked up the receiver.

“Hello!” he called. “What is it?”

“Oh, Tom!” his wife’s voice said. “I’m so glad it’s you!”

“Well, whom did you expect?” he asked with a chuckle. “What’s the matter?” he went on as he detected a half sob in Mary’s voice.

“Oh, Tom,” she went on, “I’m so frightened! Can’t you come? You’ve been out there long enough! Come!”

“Why, what’s wrong?” he demanded, alarmed at her tones. “What are you frightened of?”

“Oh, Tom, I’m sure someone is trying to get into the house!” Mary faltered. “I’ve been hearing strange noises for a long while. They awakened me and Mrs. Baggert. We don’t want to call your father or Rad, and Koku isn’t here tonight! Please come!”

“I’ll be right over!” Tom announced. “Don’t worry. The noises are only the wind.”

“Tom, there isn’t any wind blowing!”

Tom then became aware of this.

“I’ll come as soon as I can lock up!” he said, hanging up the receiver. He made quick work of shutting up his private laboratory and switching off the lights. As he stepped outside he observed that the night was a calm and quiet one, with a full moon shining and not a sign of wind that could have rattled a shutter and frightened his wife.

“She may have dreamed it,” he reasoned.

In spite of thus scoffing at his wife’s fears, Tom looked sharply about him as he walked from his shop to the house. In the distance he could see the lights in that part of the plant where a night shift was working. Scattered about the grounds were arc lights on high poles. There were many shadows and as Tom hurried around the corner of a storehouse he was sure one of these shadows moved. The outline of the shadow was that of a man.

“Who’s there?” he called sharply.

To his relief the voice of his giant helper answered:

“Koku, Master. Koku come back on job, guard big maggot!”

“Koku, have you been around the house?” Tom asked, thinking perhaps the giant might have walked around the residence to see that all was well, a frequent practice of his.

“No, Master. Koku have night off—go see yelling pictures.”

“Oh, that’s right. I did say you could go to the talkies,” Tom admitted. “Well, keep a good watch, Koku.”

“Sure, Master. No let bad mans get big maggot.”

Tom found his wife and Mrs. Baggert in their bath robes, anxiously waiting for him in the upstairs sitting room.

"Oh, I'm so glad you're here!" Mary murmured. "There have been such strange noises—like men looking in the windows."

"Men don't make noises just by *looking*," Tom chuckled.

"Well, I don't care. I'm afraid," Mary protested. "And so is Mrs. Baggert, aren't you?"

"Well," the housekeeper admitted, "I did hear sounds as if someone were trying to get in. But maybe I was mistaken."

"No, you weren't!" Mary said. "I heard them, too."

"I'll get Koku and we'll look around," Tom said. He summoned the giant and a night watchman from the plant, and the three made an inspection of the house and grounds, discovering nothing wrong, however. Then Mary's fears were quieted and the night settled into its beautiful moonlit quietness.

In the morning Tom had quite forgotten the little alarm during the night, for a letter arrived from Lieutenant Nestor, inviting Mary and Tom to visit the big, new submarine.

"I hope I need not remind Mr. Swift," the letter went on, "that we are depending upon him to help us solve our telephone problems."

"You're going, aren't you, Tom?" asked his wife as they read the letter at the breakfast table.

"I suppose so, yes, though I hate to take the time. I ought to work on my sea magnet."

"Oh, a few days' vacation won't hurt you. I'm thrilled to think I can go on a sub. You know it's a naval regulation not to permit ladies on board submarines and I'm wondering how my cousin managed to get permission for me to go."

"Well," Tom chuckled, "this sub isn't exactly in the Navy yet—it hasn't been officially accepted."

"You'll go, won't you?"

"Oh, yes."

Two days later Tom and Mary went aboard the S.V.J. 13 in the river harbor, Tom having left word with his men to push the construction of the land magnet, having made some satisfactory progress on his under-sea invention.

"Well, I'm glad you came!" greeted Lieutenant Nestor. "We need you, Mr. Swift. We can't do anything without our telephone system."

"I'll be glad to help if I can," Tom answered. "My, you have some craft

here!” he went on as he gazed at the immense submarine on the low deck of which he stood with his wife.

“Oh, you haven’t seen anything yet!” chuckled the young officer. “Come below and I’ll show you the latest sub wrinkles.”

Tom marveled as he looked. He had not paid much attention, of late, to the developments in under-sea vessels and he saw what a great advance there had been with the passing years. His wife’s cousin introduced him to many of the officers and Tom was given the freedom of the craft.

Mary, too, was made a welcome guest, in spite of the official regulation against women on war vessels. She was interested in the sub solely on account of her husband and cousin, and insisted on seeing where the latter slept.

“It must seem strange to go to sleep on the bottom of the sea,” she told the lieutenant.

“Sometimes we don’t even know it,” he answered. “We get used to it. It’s all right—as long as you know you can come up when you want to,” he added with a grim laugh.

They were below, in the officers’ quarters, when suddenly Mary grasped Tom by the arm and murmured:

“I—I have the strangest feeling, Tom! Oh!”

“What kind of a feeling?” he asked.

“As if we were—sinking!”

“We are going down—submerging!” Lieutenant Nestor told her with a laugh. “I forgot to tell you we were going to have an under-water trial. I hope you don’t mind.”

Mary did not say much, but she clung to Tom as the craft went lower and lower beneath the surface.

CHAPTER VII

KNOCKED OUT

Tom Swift was in his element now. He was aboard one of the largest, most modern and powerful of the new submarines and he had a chance to see how it behaved under water. He felt sure he could get some new ideas which might apply not only to future craft of this type but also to some other inventions he had in mind.

After the first surprise at finding himself again going down into the depths after a lapse of several years, he prepared to enjoy himself. When he looked at his wife and saw how terrified she was, though she tried bravely not to show it, he turned his attention to Mary.

"What's the matter?" he asked. "Don't you want to make an under-water trip?"

"If I had known you would be frightened," interposed the lieutenant, "I should not have subjected you to this, Mary."

"Oh, really, I—I'm not so much afraid, I suppose, as I am nervous, and I didn't expect this," she faltered. "Of course, I know there is no danger or you two wouldn't be so calm about it," and she tried to smile.

"No danger at all," Tom assured her as he looked at various controls which the lieutenant pointed out to him.

"None in the world!" smiled Mary's cousin.

"But—but if we should be caught below the surface, and not—not be able to come up?" she faltered.

"We won't!" Lieutenant Nestor declared.

"If we should," added Tom, "there are plenty of devices for getting us all to the surface again. Aren't there, Lieutenant?"

"Of course," said the officer. "Now, Mary, you want to enjoy this experience, for it must be a novel one for you. In a little while I'll take you forward to an observation room where you can look through the quartz windows and see some under-water life—that is, if the fishes aren't all scared away," he added.

The attitudes of her husband and cousin rather reassured Mary, and conquering her nervousness she tried to feel pleased with the journey which, the lieutenant said, would be only a short one in order to enable Tom to test the telephone apparatus.

Deeper and deeper into the great river, which emptied into the sea, sank the S.V.J. 13. She was moving ahead now, out toward the sea, but there was no intention of taking her that far on this trip. Seeing that Mary was now less frightened, her cousin took her forward where, in an observation room, he switched on a powerful under-sea searchlight and then opened the shutters on the quartz observation windows. At once Mary and Tom beheld a wonderful sight. It was new to Mary but Tom, in his own submarine, had observed the same thing before.

Mary found herself looking out into illuminated waters, in which swarmed schools of fish, both large and small. There were none unusually large, however, being of the river variety. They seemed not to fear the submarine at all, but swam ahead of it and around it, now floating up, to stare with curious eyes through the quartz windows at the strange beings observing them. Then, with a flip of their tails and swirling fins they would swim away. The observation windows were made of fused quartz instead of glass, for in the deep sea, where the S.V.J. 13 expected to operate later, no glass made could stand the enormous pressure.

Seeing that Mary was now so interested in observing the under-water life as to forget her fears, Tom took the opportunity to go with Lieutenant Nestor to the telephone room where the system was explained to him. A test was made but it was not successful.

“Now,” demanded Lieutenant Nestor, “what’s wrong?”

“I can’t say, offhand,” Tom stated. “I’ll study it and see if I can find out.”

The submarine remained below the surface for more than an hour, cruising about in the big river, and before she knew it Mary Swift was enjoying the trip almost as much as was her husband. As for Tom, he plunged into the troubles of the telephone system, making several tests, changing circuits, making new connections, trying now more, now less power, until at last he gave a triumphant cry.

“Have you found it?” asked Lieutenant Nestor.

“I think it’s right here, in this transformer and condenser,” Tom said. “I believe there’s a leak in the insulation and you have a short circuit.”

“I’ll have our chief electrician here in a jiffy and we’ll rip it apart!” said the lieutenant. There the trouble was found. Temporary repairs were made, another test given and the system worked perfectly.

“We are exceedingly obliged to you, Mr. Swift,” said Captain Blake when Lieutenant Nestor had reported that Tom had found the baffling trouble and remedied it. “Consider yourself an unofficial member of our crew and come aboard any time you like. In fact, I’d like to have you with us when we make the official test of this craft before accepting her. Will you come? I can’t invite your wife, as it is against naval regulations. I’d like to have you, and later we’ll have Mrs. Swift as our guest ashore.”

“Thank you,” smiled Mary.

“I can’t promise to come,” Tom said. “I’m very busy, working on a new invention. But, as the colored man said when someone asked him to change a hundred dollar bill, ‘ah thanks yo’ fo’ de compliment.’ I’m glad I was able to locate this little trouble for you and I’ll be interested to know how the trial comes out.”

“Try to be there,” invited the commander.

“I will,” Tom promised, though he did not really expect to be. Little did he guess that he would be present and under tragic circumstances.

The submarine now ascended to the surface, much to Mary’s secret delight, and cruised back to her mooring place, where Tom and his wife went ashore and prepared to journey back to Shopton.

“See you later!” called Lieutenant Nestor, waving farewell to them.

Back in his shop, Tom Swift plunged harder than ever into the work of perfecting his giant under-water magnet. The first of several of the land magnets, designed to lift great masses of junk iron, was well in the process of being assembled and preliminary tests showed that it would fulfill all expectations.

“Well, that’s that,” Tom murmured, coming back from one of the preliminary tests of the land magnet, and smiling with satisfaction. Before going to this test he had taken from his pockets all metal, and, in fact, had donned a sort of bathing suit with rubber shoes from the laces of which even the metal tips had been removed. All the workmen were similarly attired. Tom had devised a special negative shield to insulate the truck on which the magnet was mounted, so that the pulling disk would not swing in and attach itself to the vehicle. In addition to the giant magnet Tom was also constructing a sort of platform railroad car to support and carry the magnet from place to place. Later he planned to make a permanent, insulated crane to be set up in various railroad yards where the junk iron was to be shipped.

“It seems to promise well,” Tom said as he went back to his private shop. “I can now give all my attention to the under-water magnet.”

First he would make a working model of this, of about the same size as the

original land model. It would be small but powerful. To properly test it, Tom had set up in his shop a large tank which could be filled with water. Into this water Tom proposed to lower his magnet to see if it would pick up metal objects in this element, as the other would pick them up on shore.

The young inventor put in several days of hard work, being interrupted now and then by telephone calls and personal visits from Parlet and Harburg in turn. Each of them came to urge their different claims and to ask Tom to hasten work on the respective magnets.

"My business is falling off because of high overhead charges," complained the junk dealer. "I need that big magnet, Mr. Swift."

Harburg complained:

"You'll have to hurry, Mr. Swift. Under-sea salvage of wrecks can be carried on only in fair, summer weather, for we'll have to work the magnet from big barges and they aren't very steady in rough water. When shall I expect my complete machine?"

Tom answered as best he could. At last the calls and visits of the two so bothered him and interfered with his experimental work that he had to give orders to admit neither Parlet nor Harburg, nor would he answer their telephone calls.

This did not so much annoy Parlet as it did Harburg, for the former knew his magnet was being assembled. Harburg had yet to see even a working model of his. This rather peeved the salvager. On his last visit, when Tom bluntly told him to keep away from the works, the man said:

"Don't you double-cross me, Tom Swift! I have a contract with you and I expect you to keep to it. If I find you are shunting my work aside to favor Parlet, there'll be trouble!"

"I'm not in the habit of double-crossing anybody," said Tom coldly. "But I tell you this—if you don't let me alone you'll never get your magnet. I have to be let alone when I'm working on a new machine. Now leave me!"

This Harburg did, but not with good grace.

Tom continued to plan, evolve and work, until at last one night he had his under-water magnet in model form, wired and ready to connect to the dynamo. It was on the same small derrick device in his experimental shop which had held the model land magnet. As Tom swung the boom about and poised it over the large tank of water, he murmured:

"Now I'll see if it works or if it short-circuits, as all the other experimental models did."

On the bottom of the tank Tom had had Koku place some heavy plates and

chunks of iron. These represented a sunken wreck, and the weights of the pieces of iron had been calculated to make the lifting of them a test of the magnet, for the weights were proportioned to the size of the experimental machine.

“Well, now for it,” Tom murmured, lowering the disk into the tank of water. When he saw it near the submerged weights, he switched on the current which, flowing through wires wound about the hollow segments of soft iron, would magnetize them.

Eagerly he stepped to the edge of the derrick platform and leaned over the edge of the tank. His hand closed the electric switch. A moment later he felt as if someone had struck him a heavy blow on the back of his head.

“Knocked out!” murmured Tom, as his limp fingers slipped from the switch. Then his body plunged into the big tank of water.

CHAPTER VIII

SUSPICIONS

Dimly conscious that unless he did something to save his life he might drown while suffering from that strange shock, Tom Swift tried to strike out and swim to the side of the tank. It required all his will power to keep his mind on this, for his brain seemed numbed.

"I must! I must!" Tom found himself saying over and over again, though no words formed. "Someone must have sneaked up behind me and hit me on the head. I'm not going to drown! I'm not going to let them beat me! I'll finish this second giant magnet in spite of them!"

He had sunk to the bottom of the tank on his first plunge and he was half-consciously aware that his head had struck one of the pieces of iron on the bottom. This blow helped Tom's senses to come back in full power. It acted as a sort of counter-irritant.

Instinctively he had held his breath as he plunged from the derrick platform into the tank of water. Now he began to strike out with all his power as will any swimmer who unexpectedly falls into water. Up from the bottom of the deep tank Tom sprang, and reaching the surface he shook his aching head to clear his eyes and fling back the hair that obscured his vision. Dimly he saw the bright lights gleaming in his shop. Ahead of him was one side of the tank.

Tom for the first time realized what a dangerous position he was in. The sides of the tank were smooth and straight. Not so much as a finger-hold could be obtained, and the surface of the water was so far below the edges of the tank that it was impossible to reach up and grasp them.

"Must I swim around here like a gold fish in a bowl, until someone comes to rescue me?" he mused. "I'd better yell for help, I guess. I can't get out by myself."

Then he saw, dangling over the middle of the tank, the wire cables to which was attached the magnetic disk. The disk itself was close to the mass of iron on the bottom.

"I guess I'm all right, after all," said Tom, whose brain was rapidly clearing from the shock and blow. "I can grab hold of the derrick cable and

pull myself out."

With this in view he pushed away from the side of the tank, where he had vainly been trying to get a hold, and struck out for the cable which ran down into the water at the centre. Just as he was about to grasp it Tom held back, and treading water, remained in one position. He was clad in light garments with only rubber "sneakers" on his feet, so he was not hampered by heavy clothing.

"Careful, Tom Swift! Careful!" the young inventor told himself. "The cable may be charged with electricity and you'll get a shock that will kill you, immersed in water as you are. You can't get out that way!"

Tom's hopes of rescuing himself were dashed in a moment. Well he knew the terrible effects of even a small charge of electricity when the person receiving it is in water. More than one has been killed by standing in a bath tub and turning on a light or a heater where the power of the current is no more than 110 volts. What would happen when the voltage was around 2500 Tom Swift could well imagine.

Treading water, he tried to remember just what had happened and how he had come to be knocked out and plunged into the tank.

"The question is," Tom mused, his brain almost normal now, "who hit me, and did he push me in or did I fall because of the shock of the blow? My enemies seem to be up to their old tricks. Who did this? I must find out, that is, if I can ever escape from this tank."

Tom tried to reconstruct the happenings just before the sudden shock that sent him, unconscious for the moment, plunging into the water. He recalled leaning over to see what contact the magnet made with the iron pieces. He remembered switching on the first segment of the rheostat switch and that was all. Then Tom had a sudden hope.

He saw that though the magnetic disk was close to the iron pieces they were not attracted to it. In an instant Tom reasoned it out.

"Either I did not turn on the full power," he told himself, "or when I fell my hand must have opened the switch. If the disk were magnetized it would be fast to the iron. I think I can safely take hold of the cable and pull myself up. The cable is supposed to be insulated and shielded, but with a full current on I would not trust to that, in this experimental model."

Tom was again about to swim to the cable when, once more, caution held him back.

"The switch may still be on first rheostat contact," he mused. "There would not be enough power to operate the magnet, but enough to shock me and kill me, immersed in water as I am. I'll have to call for help."

Tom realized this more forcibly than ever as he looked at the sheer, smooth sides of the tank, with their edges out of reach. He was alone in his shop, the hour was midnight and there were no workmen in any of the other shops nearby.

"I hope someone hears me before it's too late!" Tom realized that he must conserve his strength, for he might have to swim about or tread water for hours —until morning came and someone entered the shop. "Well, here goes for some yelling!" he said grimly.

He called loudly:

"Help! Help! Koku! Koku!"

He repeated the call at intervals, treading water as the best means of keeping afloat with the least exertion. At times he floated on his back to rest. Then he would turn upright, tread water again and shout.

It must have been an hour after he had fallen in, though to Tom it seemed like the whole night before, pausing after a series of calls for help, he heard a noise in the shop.

"Who's there?" cried Tom. "Is that you, Ned? Rad? Koku?"

"Koku here, Master," boomed the voice of the giant. "Where Master?" he asked, as looking about he could get no glimpse of the inventor.

"I'm in the tank, Koku!" called Tom. "I fell in or someone knocked me out and pushed me in. Get a rope and help me out!"

Koku, who had often helped Tom operate the experimental magnets, ran to the derrick platform and climbed up on it, as the best vantage point from which to get a view over the top of the big tank. From there he looked down on the almost exhausted form of his master.

"Get a rope, Koku!" Tom begged in a weak voice, for he was very weary. "Throw me a rope!"

"Why Master no grab hold derrick rope?"

"Because, Koku," Tom explained, "I'm afraid the juice may be partly turned on in the magnet, and if there's a short circuit I may get a shock, even though the derrick cable is supposed to be shielded and insulated."

The giant looked at the switch. Then he said:

"No juice on." He had learned to call the electric current that, as it was a common term used around the shop.

"Are you sure, Koku?"

"Sure, Master. Um switch all way back!"

"Then," mused Tom, "I must have pulled the switch as I fell in. There has

been no current on at all and I could have safely pulled myself out long ago. Only I didn't dare take a chance."

He knew he had acted wisely but he regretted the long hours of needless suffering he had put in. He now swam toward the cable and caught hold of it where it entered the water. When Tom tried to pull himself up, hand over hand, he found his strength was not equal to the task. He felt himself sinking back. Koku saw his master's distress and called:

"Hold on! Koku make derrick pull master up!"

"Don't turn any juice into the magnet!" warned the inventor. "Even though I'm sure it's insulated I don't want any part of 2500 volts tickling me while I'm in the water."

"Only turn juice on in derrick winder," Koku said, by "winder" meaning the drum of the windlass. "Master hold fast."

This Tom did, desperately enough, and soon the low hum of the gears in the derrick drum told him the cable was being wound up. Thus Tom was lifted from the water on the same wire ropes that also lifted the magnetic disk, and a moment later Koku swung the limp and dripping form upon the platform where the giant stood.

"What happen?" asked Koku as Tom sat down to rest.

"I wish I could tell you," he said in a weak voice. "All I know is that I was lowering the magnet for a test, when suddenly it seemed as if someone hit me on the head and I fell in. I lost consciousness for a moment—knocked out, you know."

"Koku know," said the giant. "Who did um?"

"That's what I must find out," Tom murmured. "I've enemies enough, that's sure. I'm rather inclined to think that maybe one of the men who is so eager to get control of my magnets——"

Tom suddenly interrupted himself to ask, "What's that noise, Koku? Quick! Look around!"

CHAPTER IX

HELD FAST

Springing from the derrick platform, energized into action in spite of his weariness as he realized that he might catch some rascal responsible for what had happened, Tom Swift made a quick descent to the floor of his shop. He was followed more slowly by the giant.

“Who’s in here?” Tom cried sharply. “Koku, get the gun and watch out for any suspicious character!” he ordered.

“Koku no shoot—Koku catch um in hands!” yelled the giant as he hurried from one door and window to another after Tom. Then a voice which quieted all Tom’s fears and suspicions called:

“What’s the matter? What’s all the row about and where have you been all night, Tom?”

“Well, part of the time I’ve been swimming around in the magnet tank, Ned,” Tom answered, sitting down on a box near his desk, for he did not want to dampen his easy chair with his wet garments.

“Swimming in the tank!” exclaimed Ned Newton. “That’s a new form of midnight amusement for you, Tom Swift.”

“Believe me, it was far from amusing!” murmured the inventor. “It was nearly a fatal accident.”

“Fatal!” cried Ned, no longer joking. “Why, what happened?”

Tom explained, told how Koku had come in the nick of time and then Tom asked:

“How did you happen to come in, Koku? Did you hear me calling?”

“Yes, Koku hear Master call, but Koku come in anyhow. Every night Koku come in this shop, some time, see nobody take giant maggot. So I come anyhow and hear you yell.”

“Well, that’s a mighty good habit of yours, Koku,” said Tom fervently. “Keep it up. You may have saved not only my big ‘maggot,’ as you call it, but you probably saved my life. I couldn’t have kept up much longer and I didn’t dare take hold of the derrick cable, though it was harmless after all.”

“Whom do you suspect attacked you, Tom?” asked his manager.

“I am not really sure,” Tom said. “I suspect, but it isn’t fair yet to speak any names. I’m going to investigate first. Let’s see if any door or window has been forced. How did you get in, Ned?”

“Through that door—it was open,” the manager said, pointing to a portal that was still ajar.

“Koku come in that way with key—um leave door open ’cause um run to see why Master call,” the giant explained.

“Then that’s all right,” mused Tom.

None of the other several entrances to the private shop, doors or windows showed any signs of having been forced. Then Tom asked his manager:

“How did you happen to come over here at this hour of the night?”

“To deliver this,” Ned answered, holding out a telegram. “The telegraph office night man said he had been trying to get someone at your house to answer the ’phone, but when he couldn’t rouse anybody he remembered that he had orders to try to get me, so he did. I tried to call you on the ’phone, but as no one answered I rushed over in my car.”

“I remember now,” Tom said, “there’s no one home but dad and he’s a sound sleeper. So is Rad, so the telephone would not arouse them. Mary went over to her mother’s, as I said I thought I’d be in my laboratory nearly all night, and Mrs. Baggert went to see her sister. That accounts for no one answering the ’phone. I suppose you were out also, Koku.”

“Yes, Koku go shouting pictures. Like um so much stay see number two show. Then I go get supper an’ I guess mebby I eat a lot for it late when I hab ’nuff. On way home I stop here see big maggot all right an’ hear master yell. I hab key, so I come in.”

“A mighty good thing you did,” murmured Tom. “Thanks to you also, Ned, for bringing that wire. I suppose it must be important.”

“I should judge so, but the manager sent a boy to my house with it instead of dictating it to me over the ’phone, so I don’t know what it says.”

“Well, we’ll soon know,” remarked Tom as he tore open the yellow envelope. As he read the message he exclaimed, “Well, can you beat that!”

“What is it?” asked Ned. “Another offer for your giant magnet?”

“No,” chuckled Tom, “it’s from that pest Harburg. He wires, ‘When can I expect complete machine. Please hurry!’ I’ve a good notion to lay the whole thing aside and concentrate on making more land magnets!” muttered Tom. “But I’ve given my word and signed a contract, so I’ll have to go through with it.”

“After all,” remarked Ned, “maybe it’s a good thing he did send that wire, though it got me out of bed.”

“How do you mean good?” asked Tom.

“Well, if Koku hadn’t happened in, I should have been here in time to save you.”

“Yes, I suppose that’s so. Well, I’ll be glad when I have both magnets delivered and can work on something else. Those men get on my nerves, they’re so impatient.”

“Well, they’re business men and you’re an inventor,” Tom’s manager reminded him. “You’ve done enough for tonight. Better get to bed.”

“I haven’t yet made the test to see if my water magnet will work,” Tom complained. “I was just about to do so, when I was attacked—or, anyhow, I fell in the water,” he substituted.

“I guess there’s no question but that you were attacked,” decided Ned. “The next thing is to find out who did it. But enough for tonight.”

“Yes, I guess you’re right there,” said Tom wearily. “I’m in no shape to make accurate observations now. I’ll let the test go until tomorrow. Koku, will you mount guard here for the rest of the night?”

“Sure, Master. If bad mans come Koku choke um an’ chuck um in tank like fish!” he laughed.

Knowing that his latest invention would be safe with his giant on guard, Tom Swift went home, an example followed by Ned Newton. It was some time, though, before Tom could get to sleep. His recent perilous experience had somewhat unnerved him. Then, too, he was worried over the fact that some of his former relentless enemies might again be on his trail.

“I’ll finish that sea-salvaging magnet in spite of them!” Tom told himself grimly.

Then he fell asleep and the sun was high when he awakened.

A more careful inspection next morning did not disclose any clues to the person, or persons, who might have been responsible for Tom’s mishap. Koku reported that his tour of guard duty had not been disturbed and though he, Ned and Tom made another round of the private shop and laboratory inside and outside, no new clues were discovered.

“We’ll just have to be on the watch,” Tom said. “The next time I make a test of the water magnet, I’ll have someone besides myself on hand, in case I’m attacked again. Then I’ll have help in getting out of the tank.”

Tom found no chance in the next few days to make any further tests of the water magnet. Some unexpected trouble developed in the assembling of the

first full-sized land magnet and Tom had to give his whole attention to making some changes, necessitated by the fact that heavier currents would be used in the large apparatus than were used in the model. New insulation had to be provided and a non-electric shield of greater repelling power had to be rigged on the car that held the crane, or derrick.

Tom was again bothered by a visit from Harburg, following his telegram.

"Mr. Swift," said the salvager, "I simply *must* have my working magnet! There is one wreck in particular, off the New England coast, that I want to raise. We must hasten!"

"Why?" asked Tom, as patiently as he could.

"On account of the weather, for one thing. The summer is passing. We shall soon be in the fall storm period. Also, I have word that another salvage concern, using divers, is about to make an attempt to raise the wreck, or at least have a try for the treasure. You know this is anybody's wreck and the first one who gets to it will have the prize."

"I'll do the best I can for you, Mr. Harburg," said Tom a bit wearily. He realized, that since he had given this man his promise, and had entered into a contract with him, he was obligated. "In a few days I shall have completed the first big land magnet and tested it. Then I'll work night and day on yours."

"I hope you will! I need that magnet. Hurry all you can!"

Tom did this, for he had a stern sense of duty. Besides, he was really eager to see if he could make a giant under-water magnet like the one that would work on shore.

Finally, after much hard and sometimes disappointing work, Tom believed he had solved all the problems connected with making the full-sized land magnet, and the day came when the test was to be made. The magnet had been mounted on a special railroad flat car with a powerful derrick arrangement. For the time being Tom planned to use the electric current from a dynamo in one of his shops, running wires from it to the magnet. The new invention would be on a car, which could be moved about on a railroad siding connected with the main line that tapped Tom's plant.

"Later," Tom told Ned, "I'll rig up a dynamo run by a gasoline engine on the car and the unit will be complete and portable enough to be moved about the country to any scrap iron junk yard."

"Sounds like a good idea," Ned rejoined.

Tom sent word to Mr. Parlet to come and witness the final test of the full-sized magnet. If the apparatus should work, and Tom felt sure it would, it could then be turned over to the junk man who would at once put it into

service. After that others could be made for his various yards.

"Well, are we all set?" asked Tom as he came from his private office one morning and approached the group standing about the big magnet on the derrick car.

"All ready for you to turn on the juice," Ned answered after he had checked up. "I've a junk pile as big as a house for the magnet to pick up as a test load."

"Well, I hope it does it," Tom said.

He was a little anxious as he took his place at the controls and got ready to switch on the current into the big disk which was the magnet proper, or the "maggot," as Koku called it. The giant was on hand, as was aged Mr. Swift, accompanied by Eradicate.

"Dad, keep Rad well back out of the way," Tom begged his parent. "I don't want him caught again."

"I'll watch him, Tom. I hope your magnet works."

"I think it will, Dad."

Tom Swift operated the apparatus that swung the boom of the derrick from which the magnet with its lifting cables and wires was suspended, outward over the big pile of junk iron. Slowly the disk was lowered until it was almost in contact with the conglomeration of bars, plates and twisted pieces that represented a load.

"Here we go!" cried Tom. He pushed the rheostat switch over one segment after another with a slow but firm hand. An instant later a great mass of tangled iron seemed to leap up—to reach and cling to the disk. It was a giant's load and as Mr. Parlet saw what a great quantity had been attracted in one mass, he cried:

"That's wonderful! That solves all my problems!"

Tom now turned power into the windlass motor. He expected to lift, easily, the great mass of iron; a mass heavier and larger than ever an electric magnet had before raised. There was a whining hum. There was a smell of heated bearings. The cable tauted and strained but something was wrong. The giant magnet was held fast, motionless and powerless by the great mass of iron it had tried in vain to lift.

There was a worried look on the face of Tom Swift. There were anxious glances from the workmen, his father and Ned Newton.

"What's the matter?" called Mr. Parlet. "The iron clings to the magnet, but why don't you swing it up off the ground?"

"I'm trying to," Tom said.

He turned more power into the wires connected to the derrick windlass. It creaked and groaned but it could not lift the immense weight. Failure stared Tom Swift in the face. He realized that his magnet might be a success, but that the lifting derrick had been taxed beyond its ability.

There was a sad and bitter feeling in the heart of the young inventor.

CHAPTER X

A MIDNIGHT RAID

Amid a tense silence, broken only by the hum of the distant dynamo and the creaking of the pulley sheaves, the little audience that had gathered to witness the test of Tom's first full-sized giant magnet anxiously awaited the outcome. Ned Newton felt intensely for his friend and business associate. Koku, though he understood little about the technical part of the apparatus, was wondering, in his slow way, why his master did not make the "maggot" perform as it should.

As for Mr. Parlet, he was plainly put out. He moved restlessly about. He glanced from Tom to the mass of iron clinging to the magnet disk, and then again directed his gaze to the inventor.

"Can't it make the grade?" he asked sharply.

"I think it will," Tom Swift murmured, though in his heart he was almost ready to admit defeat.

"Then why don't you lift the load?" demanded the junk man. "I admit that the magnet itself picks up more iron scrap than any I've ever seen. But I must have more than that. I have to get the scrap aboard my trucks to haul it from the railroad yard to my place. You agreed to build a magnet that would do that."

"I've made the most powerful magnet in the world!" snapped Tom, upon whose nerves, now strained to the breaking point, this sharp business man was acting as an irritant.

"What good is a magnet if the derrick attached to it won't lift the load?" Parlet demanded, reasonably enough, it appeared.

"There *does* seem to be something wrong with the derrick," Tom was forced to admit. "But I can easily remedy that."

Hastily he checked over the various controls and switches. His keen eye saw something that in an instant told him what was wrong.

"Koku," he said in a low voice to the giant who was now on the derrick car with him, "did you change this rheostat control of the derrick windlass?"

“Koku push him handle over leetle bit,” the giant admitted, indicating the setting device.

“What for?” snapped Tom.

“No want Master break um maggot,” was the answer. “Mebby no good to have too much juice turned on. Koku fix!”

“Yes, you dear, big, blundering old booby!” exclaimed Tom, smiling, for now he understood what the trouble was. “You nearly let me in for a bushel of trouble! I need all the power I can put into the derrick motor-windlass. You needn’t worry about straining my machinery. It’s built over-size, to take any voltage, and if, by any chance, there should be too powerful a current turned on, this cut-out safety switch would throw it off. Koku, you meant all right, but you almost gummed up the works.”

“All right now?” asked the giant, probably not realizing what he had done.

“All right,” Tom answered with a smile. He had not seen Koku change the rheostat control, but he could figure out how the giant, having seen Tom do this in his experiments so as to prevent damage, had, in the excess of his loving zeal, done the same thing on the sly when the real test was to be made.

Parlet and the little throng of observers anxiously waited, looking at Tom while he talked to Koku, though it is doubtful if anyone caught the real import of the conversation. Then Tom said:

“It’s all right, gentlemen! Just a trifle of a hitch. I can remedy it in a moment. I had the safety switch set too low. Now watch!”

Swinging over the rheostat handle, Tom permitted the full power to turn the windlass drum. There was a louder whine from the motor, a deeper note in the purr of the gears, and a moment later the great mass of junk iron was lifted as easily as a man might lift his knife and fork. The giant magnet clung to the bristling pieces of iron, that looked like a mass of big, rusted straws, and then, as the great load was lifted, Tom swung the derrick about, poised the mass for a second over an imaginary truck and cut off the magnetic current.

With a crash that echoed all about the grounds, the junk fell with a clatter and clang to the ground, for there had been no truck provided to take it in this preliminary test.

“If a truck had been there,” Tom explained, “it would have had a pay load in a moment, would it not, Mr. Parlet?” he asked.

“Yes, Mr. Swift, it would,” the junk man was forced to admit. “You have turned the trick after all. I was afraid you were going to have a failure.”

“I wasn’t,” said Tom with a confident smile. In his heart he knew he had been afraid for a little while. He had seen what was wrong just in time.

The giant land magnet was a success. To make sure it was by no mere chance that he had lifted and swung the immense load, Tom moved the derrick boom and the attracting disk over the pile of scrap again. This time the magnet picked up even more pieces of iron. There was not a hitch as Tom operated the windlass and the heavy load of scores of pieces of iron was swung about like so many feathers and deposited where a truck might have been.

"Good boy, Tom!" cried Ned, and a little cheer arose from those who had witnessed the tests. "You put it over!" He climbed up on the car to shake hands with his chum.

"It was a close call," Tom said in a low voice as he explained what had been wrong. "After this, Koku," he went on, "don't monkey with my apparatus, no matter what you think. Come and tell me."

A third load was lifted and swung to and fro rapidly. Tom wanted to demonstrate that his magnet would retain its attractive power even under great stress. This ended the tests and Tom told the junk man:

"You may take this first of the completed magnets any time you care to, Mr. Parlet. I will give orders to rush work on as many more as you want."

"I'll need half a dozen at least. I've a lot of scrap coming to the different railroad yards and the sooner I can get it to my various distributing depots the more money I'll make. Scrap is at a good price now."

"I wish you luck," Tom said.

"And I congratulate you!" responded the scrap iron man, his attitude considerably changed from that of a few minutes before when he had thought he was witnessing a failure.

"Well, so much for that," Tom murmured as he walked back to his office with Ned, having left orders to enable Mr. Parlet to take away the first completed giant magnet. "It's a success and I can go back to my other problem."

"You mean, making the completed water magnet?"

"Yes. There are more puzzles to that than I thought there would be. But I think I can work them out. I'm going to be busy for the next few days and nights. I may not see much of you, for I'm going to stick pretty close to my laboratory. I think I know where the main trouble is and how I can remedy it. I have also thought of an improvement. So don't worry if you don't see me for about a week."

"I won't, but I'll keep an eye out for you. I don't want you to fall in the tank again and have to tread water until help comes."

"I don't fancy that myself," Tom chuckled. "I'm going to have Koku on

guard and if any of those sneaking enemies of mine try to slip in to knock me out, they'll get more than they bargained for."

"They will if Koku gets hold of them," agreed Ned. "I suppose, Tom, if you're going to be so busy over the water magnet, you won't accept this invitation," and Ned held out a card.

"What invitation is that?" asked Tom.

"I suppose you must have had one," Ned went on. "They wouldn't ask me without asking you. Probably it's among your letters that you haven't opened."

"There's a lot of unopened mail on my desk," Tom admitted. "But what's this?" He took the card from Ned's hand.

"It's a formal invitation that came to me from Lieutenant Nestor," was the answer. "Wants me, and you too, I suppose, to witness the official trial voyage of the submarine."

"Oh, yes, that," murmured Tom. "He said he was going to send an official bid when the boat was ready for acceptance. This must mean they have the telephone system I remedied for them in working order. Well, I'm sorry, but I cannot go to the trial. I'm too busy. Why don't you take it in, Ned?"

"I'll not go without you, Tom. There's too much doing around here for me to leave."

"Well, yes, I suppose there is. I'll have to depend on you to push the work of turning out the five land magnets while I stew over the water one."

"I'll do that, Tom." Though Ned did not say so, he determined to keep an eye to Tom's safety. He did not like what had happened the night Tom had fallen into the tank and had been so nearly in danger of losing his life.

The first of the giant land magnets was sent on its way over the railroad, and then the work of making more of them began. Tom dismissed this problem from his mind, and began to concentrate on perfecting the magnet that he hoped would raise sunken ships from the bottom of the sea.

"I think," mused Tom, "that I'll sell more magnets to Harburg than he imagines he'll need. I don't believe one magnet will raise a sunken iron vessel. It might, if it could be lowered to the exact centre, but that would be almost impossible without divers to direct it. And I hope my magnets will do away with expensive diving operations. With two magnets at each wreck, one fore and the other aft, the salvaging ought to be comparatively easy. I'll suggest that to Harburg."

Carrying out the plan he had outlined for himself, Tom Swift now figuratively shut himself up in his laboratory and workshop and began to study the problem of the sea magnet.

He soon discovered a few errors he had made and in the course of this he hit upon some improvements which he incorporated in the apparatus. As a matter of fact, the sea magnet model had not been given a real test, because of Tom's plunge into the tank. This, and the necessity of rushing work on the land magnet, had interfered with completing the test.

"I think I'll be ready for it tomorrow," mused Tom one night, after about a week spent in semi-seclusion during which he had worked hard. "I'll not make the test at night, nor by myself," he went on. "I'll run no chance of another midnight attack. I'll have Ned, Koku and some of the men in when next I lower the magnet into the tank."

Tom was looking at the revised model in his laboratory. The hour was late. In fact, it was midnight again, but though he felt a great desire to fill the tank with water, and make the test, he refrained.

"I'll do it first thing in the morning," murmured the inventor. "I guess I'll go to bed now. It's queer how sleepy I feel all of a sudden," Tom went on, thinking, rather than saying the words. "I guess I must be suffering from brainfog. I need a good night's sleep. I'm almost tempted to doze off here—on this couch—I feel so sleepy—I wonder——"

Tom's brain ceased functioning. He slumped forward on his desk, overcome by a strange drowsiness, and leaning his head on his folded arms, he lost consciousness.

From out of the dark shadows of the laboratory a sinister figure crept, an evil smile on its face, its hands outstretched to the desk on which were the plans, drawings, specifications and all the documentary secrets of the giant magnet.

"I have him now!" murmured the voice of the midnight raider.

CHAPTER XI

KOKU'S SOUVENIR

Tom Swift could not determine how long he had slept, or rather how long he had been in a state of unconsciousness. He was inclined to the latter explanation of his condition when he did rouse up and try to force his benumbed senses to function.

Slowly he opened his eyes, and even that effort sent the blood coursing through his aching head with throbs of intense pain. He found himself breathing hard, and became aware that his head was still resting on his folded arms. He sat at his desk in a cramped position.

"I must have been pretty tired to have fallen as sound asleep as this," mused Tom as he tried to raise his head. "All in!"

The effort of lifting his head, even more than opening his eyes, sent another wave of throbbing pains all through his system. Like darting tongues of fire they were—those racking pains. It was then that Tom knew he had been in no natural slumber.

"What—what happened to me?" murmured the inventor, as with a great effort of will, in spite of the pain, he sat up in his desk chair.

His eyes roved about his workshop laboratory and rested on the model of the giant sea magnet where it was suspended from an improvised derrick-crane in front of the tank. As yet the tank had not been filled with water to cover the iron on the bottom, for Tom had decided to postpone to daylight the conclusive test. One look showed Tom that his apparatus had not been tampered with—that is, outwardly it showed that no damage had been inflicted in the midnight raid.

"There's no telling what they might have done to the wiring, the switches, controls, the rheostat or the magnet itself," Tom mused.

His head was rapidly clearing now, though in the process of the stagnated blood returning to veins and arteries it caused great suffering.

"Some enemy sneaked in here," Tom reasoned. "I haven't been in a natural sleep. I was knocked out again or——" he became aware of a sickish smell lingering in his nostrils and his mouth had a most unpleasant taste. "I've been

drugged!" Tom exclaimed. "No, under the influence of chloroform or ether. There's been bad business here just when I thought everything was going so nicely. I should have had more men on guard than Koku alone. My giant must have fallen asleep, or else he went to the 'howling' pictures," reasoned Tom. "Maybe he was drugged, too. It would take a dozen men to overpower him in an open fight. I wonder what happened to Koku."

He staggered to his feet, conscious of an enervating feeling all through his body. His head ached less now as the circulation became more normal, and his first act was to open several windows which he saw were closed, but which he thought he remembered being open when he was finishing his experimental work before deciding to stop and go to bed.

The cool night air blowing in helped to clear Tom's brain from the effects of the drug he was sure had been used, and his first act was to climb up on the derrick platform and inspect the giant magnet.

"Seems to be all right," he murmured. "But I can't tell except by a test and I'm not going to chance that now. They may have changed the wiring so I'd burn out the motor or the magnet. I'll wait until morning. I wonder who could have slipped in here and knocked me out with some kind of dope? I must get help and we'll go through the plant. No telling what damage may have been done!"

Satisfied that outwardly at least his magnet was not harmed, Tom went back to his desk, intending to telephone a general alarm to the night watchmen in the various buildings. Then Tom decided to see where Koku was and to summon Ned Newton from the latter's home a short distance down the main village street.

As Tom looked at his desk, where he had been sitting just before that strange feeling of drowsiness had overcome him, he noticed that a pile of papers, plans, calculations and specifications of the great sea magnet were missing.

"So that's what they were after!" exclaimed the inventor. "The secrets of my giant magnets. Somebody is trying to double-cross me! I should have been more careful! Now all my hard work is wasted!" he said bitterly. "Where can Koku be?" he wondered. "I told him to stay on guard until I relieved him. There's something wrong here!"

Looking about his office and laboratory to make sure the missing papers had not been knocked to the floor under his desk, and failing to find them, Tom reached for his private telephone, intending to give the alarm.

His hand had scarcely grasped the instrument, however, before he became aware of a commotion outside the laboratory.

“Um stop! Um stop! Koku twist um all up like a string. Um stop an’ bring um’ back!”

Tom hurried to the outer door, looked into the night now illuminated by the moon, and shouted:

“Get him, Koku! Get him!”

“Yes, Master, Koku get um!” yelled the giant.

Looking down the path that led from his laboratory to his house, Tom Swift saw two figures. The foremost was that of a fleeing man, and close behind him was the striding giant who, as he ran, shouted:

“Um stop! Um come back! Koku bust um all up!”

The fleeing man did not stop. On he ran, desperate with fear, and Koku thundered behind him, the giant’s big feet pounding the gravel with thuds not unlike those an elephant might have produced.

Tom started to join in the chase but there was a weakness in his legs, a pounding in his heart and a ringing in his ears that told him strenuous exertion, so soon after he had awakened from the effects of the drug, might be dangerous.

“I’d better telephone an alarm!” Tom mused. “I guess Koku can catch that fellow. If he does, my giant won’t need any help. I’m all in. I can’t join the race!”

Watching to see Koku pursuing the midnight thief around a bend in the path, Tom staggered back to his desk and pressed the button that would ring the private line telephone bells in all the various shops. Night watchmen were on duty in each one and they had orders to answer at once this emergency alarm call.

“Yes, Mr. Swift,” came the voice of Tredwell in the pattern shop. He had been the first to answer.

“Come to my laboratory at once!” Tom ordered. “I’ve been attacked and there’s been a theft.”

“I hope you aren’t hurt, Mr. Swift!”

“Never mind that!” answered Tom. “Come as fast as you can!”

“Right away!”

Tom summoned the other watchmen in quick succession and having completed his calls, got a drink of water, which greatly refreshed him and helped further to clear his brain. Then he stepped to the door and looked out again into the moonlit night.

He saw a figure running toward him, and for a moment thought it might be

the stealer of the magnet plans coming back to the attack. Tom was about to hurry to his desk to get an automatic he kept there for emergencies, when, as the figure swung into a brighter zone of light, he saw it was Tredwell.

"Are you all right, Mr. Swift?" panted the man, for he was rather elderly and had run fast.

"All right now," Tom grimly answered. "But I wasn't a little while ago. There's been a robbery, Tredwell."

"A robbery, Mr. Swift?"

"Yes. The plans and specifications of my giant sea magnet. Of course I have duplicates," Tom went on, "but I don't want the originals to fall into the hands of my enemies."

"I should say not, Mr. Swift. Which way did the robbers go?"

"I don't know, now. There was only one, as far as I could see, and Koku is after him."

"Oh, then everything will be all right. If that giant catches him, the robber will wish he'd stayed away from here."

"Yes, but first Koku has to catch him and the thief has a start. But get busy, Tredwell. Scout around and see if you can get any trace. You too, Mortimer, Jansen, Larimie," he called to the other watchmen who came running toward the laboratory. "Scatter and get busy!"

By this time all those on late duty in the plant had been summoned to answer the midnight alarm and the buildings and grounds were being searched to disclose any other hidden thieves.

Tom telephoned Ned Newton who, rousing himself from a sound sleep, said he would be right over.

"But I think you can depend on Koku," chuckled the manager.

"I hope so," murmured Tom, who was feeling far from well, so much of the drug had he inhaled.

Having done all he could by telephone, Tom went to the outer door again. He caught sight of Koku striding toward him out of the moonlight. The giant was carrying something in his hand.

"Did you get him?" asked the inventor.

"Koku get piece of um!" the giant answered with a booming laugh.

"A piece!" gasped Tom.

He waited to see what sort of a souvenir Koku would bring him.

CHAPTER XII

DANGEROUS SPARKS

Still feeling the effects of the knock-out potion administered to him, and hoping that the watchmen might have better luck than had the giant, Tom Swift watched Koku approach, holding out that mysterious something.

"Did you—did you kill him, Koku?"

"No kill—but get piece of um," the giant repeated with a deep chuckle. "Here um is!"

He held out to Tom, standing in the doorway of the laboratory, part of a man's trousers and coat. Evidently the giant had got near enough to the running thief to grasp him at the middle of the back. The fleeing one, probably imbued with extra strength at the sight of the giant, had leaped forward, leaving in Koku's big hand a cloth souvenir.

"Well, I'm just as glad you didn't rip him apart," said Tom with half a smile. "But I wish you'd caught him and got back my plans."

"Koku sorry," boomed the giant. "Koku run fast but little man run faster. Um take master's maggot?" he asked.

"No, he didn't get away with that," Tom replied. "But he got what was almost as valuable, papers and plans. However, I'm sure you did your best, Koku. Could you tell who he was?"

"Koku no see um's face," the giant replied. "He run fast, back to me, but I git piece of um."

"So I see," responded the inventor. "This may prove to be a clue," he went on as he took the pieces, torn from coat and trousers, to his desk. "I'll notify the police, though I can't say much for the detective force of Shopton. Well, it might have been worse. They might have disabled the magnet. I think I can rush work on it so that the stolen plans and specifications will not be of much use to them. Oh, here you are, Ned," he continued as his manager leaped from a car which, with screeching brakes, he brought to a sudden stop in front of the laboratory.

"What's wrong, Tom?"

“Plenty. Come in and I’ll tell you about it.”

Morning was tinting the eastern sky pink when Tom had finished his narrative and had further cleared his head by some strong coffee Mrs. Baggert sent out to him. By the time Ned was in possession of the facts, as nearly as Tom could relate them, the various watchmen had completed a tour of the buildings and grounds and had reported seeing no suspicious person or persons.

“I guess there was only one,” Tom decided, “and he got away, except for the souvenir he left Koku. Well, I’m going to bed.”

“I should think you would be. You must be all in,” Ned remarked. “What about the sea magnet? Is it all right?”

“I’m hoping it is, but I won’t know, for sure, until later. I’m going to give it a final test soon.”

The excitement caused by the midnight raider slowly quieted down. Once more the big Swift plant reposed in the waning moonlight of the new day. Tom Swift closed his eyes in his still slightly-aching head and wondered what would happen next.

“They certainly are after me,” he murmured. “I wonder who it is? I don’t see what object Parlet or Harburg could have in wanting to steal my plans. They are getting what they want. Unless,” he reasoned, “they figure they can build the magnets themselves at a lower price than I am charging them. I hardly believe they’d play such a mean trick. It must be some of my enemies.”

Tom fell into an uneasy slumber which lasted until nearly noon, Mrs. Baggert insisting on keeping the house quiet so Tom could get some much-needed rest. When he awakened he felt much better, physically, though he was perturbed about the loss of his plans and the specifications and directions for building the giant magnets.

A daylight inspection of the shop revealed but one clue—a bottle about which lingered the odor of some drug. No door or window showed any sign of having been forced and Tom decided that the thief must have used a skeleton key to let himself in.

“Once in, he hid himself and waited for me to get quiet before he let loose the fumes that overpowered me,” Tom told Ned.

“How did he escape them himself?”

“He must have had on a gas mask. Of course, I’m only guessing at all this,” Tom said.

“Where was Koku? Wasn’t he supposed to be on guard?”

“He was, and he tells me that he never stopped patroling around the

laboratory. The fellow must have slipped in when Koku was on the far side. Then he doped me, caught up the plans and watched his chance to slip out. It was quite by accident that Koku saw him going away, and, knowing him to be a stranger who had no right on the premises at that hour, my giant at once gave chase. What the result was we know."

"That fellow, whoever he was, must have had a great fright when he saw Koku after him," chuckled Ned.

"Especially when Koku grabbed him!" agreed Tom. "Well, the next thing to do is to see if the magnet has been damaged and if it will work."

"I'll be there to see that nothing out of the way happens," decided Ned. "I don't want you doing the gold fish act again."

"Nor do I want to do it," Tom said. "All right, let's go out to the shop. I'm eager to get this sea magnet into the manufacturing plant. I mean, I want some full-sized ones made. Harburg is getting impatient and I don't blame him. As he says, the summer is the only time wreck salvaging can be done. Did I tell you the change in my plans, Ned?"

"No. What is it?"

"Well, I'm going to use two magnets instead of one; one magnet to be lowered at the stern and another at the bow of any wreck Harburg attempts to get up. It would be almost impossible, lowering a magnet from above, to have it clamp fast to the exact 'midship portion of a sunken craft, except by using a diver. As I understand it, that is what Harburg wants to avoid."

"A good idea," Ned commented. "You'll be selling two sea magnets, instead of one, for each job, Tom."

"Yes, there's that to be thought of also, though it did not occur to me at the time. All I want to be sure of is that my apparatus will work."

"Well, here's hoping," spoke Ned as the two went out to the laboratory.

The setting for the trial of the model magnet was the same as when Tom had made his first and almost disastrous test. The big tank was filled with water and at the bottom Tom had placed a rough semblance to a sunken, iron ship. He had made this change from the mass of iron he at first used.

"It will give us a better line on what can be expected," he explained to Ned, commenting on the change.

"Yes. I suppose you have the weight proportions worked out?"

"As nearly as possible," Tom answered. "If this comparatively small magnet will lift that mass I am sure one of larger size, or, rather two, will lift any ordinary size wreck. Of course, I don't pretend that two of my magnets, or even six, will raise a ship like the *Leviathan*. As I understand it, the wrecks

Harburg is going after are small steamers."

"So he told me. Some of them, though, went down with considerable treasure in the shape of valuable cargoes, and some with many thousands of dollars in gold aboard."

"He'll get rich if he raises many bullion wrecks," commented Tom.

"Yes, and out of your invention," spoke Ned a bit regretfully.

"Oh, well," Tom said, "it's all in a day's work. There is a clause in my contract with Harburg providing that above a certain sum recovered I am to have a percentage."

"Then that isn't so bad," Ned agreed.

Aside from the change in the shape of the object to be raised out of the tank, and some alterations in the switches, wiring and derrick windlass of his model sea magnet, Tom Swift was now prepared to again operate the same device that had so nearly brought him to grief that fateful night.

Besides Ned and Koku, there were in the shop a number of workmen in case of emergency. Mr. Harburg came almost at the last moment, for Tom had asked him to be present at the test.

Taking his place on the derrick platform, Tom Swift inspected all the apparatus and then looked in the tank. It was nearly full and on the bottom, beneath the water, was the "wreck" to be raised.

"Got plenty of juice?" asked Tom, speaking through a portable telephone to the foreman of his engine room from which dynamo wires ran to the derrick and magnet motors.

"Plenty, Mr. Swift," was the answer.

"Well, then, I guess we're ready to go," remarked the inventor.

Turning a switch, Tom lowered the magnetic disk into the water until it dangled just above the "wreck." He had not yet turned the current into the magnet as he wanted to swing it about until it was as nearly over the centre of the submerged mass as possible. He was using only one magnet now, for he had made only one model. In the clear and comparatively shallow water of the tank he could easily see to make this adjustment. Of course, in bringing up a wreck from the sea bottom he would have to operate more or less by guess work.

"How does it look, Ned?" Tom called to his manager who was on the ground near the tank. "Is she about right?"

"Lower away!" advised the manager. "She's amidship now."

Tom let the magnet sink until it was close to the mass representing a

wreck. Then suddenly he turned the rheostat switch which allowed the electricity to flow into the soft, hollow, iron segments of the magnet. At once it exerted its powerful pull and, before the eyes of the throng, the “wreck” actually lifted itself up from the tank bottom and attached itself to the magnet.

“Hurray!” cried Ned enthusiastically.

“She works!” exclaimed Mr. Jackson.

“But can you lift it up?” asked Harburg, who was something of a skeptic. “Let’s see the derrick work. That’s the next important thing in this salvaging business. I must have my wrecks up out of the water.”

“I’ll show you!” cried Tom, turning another switch to operate the derrick windlass.

An instant later it was seen that something had gone wrong. A veritable sheaf of miniature lightning flashes leaped from the derrick and a shower of dangerous sparks surrounded Tom Swift, who stood there with his hand on the controls!

“Look out!” shouted Ned Newton.

Tom uttered a cry of alarm and was seen to stagger backward. The sparks increased in volume and intensity and murmurs of horror arose from the group assembled to view the test of the model giant magnet.

CHAPTER XIII

THE SUBMARINE MAGNET

"What's wrong?" demanded Harburg. "If this is the way my submarine magnet is going to operate——"

"There's been an accident!" exclaimed Ned. "Tom! Tom!" he shouted. "Shall I cut off the juice at the main switch?"

Above the crackle of the leaping sparks Tom's voice was faintly heard saying:

"Cut it off!"

In preparation for some such emergency as this Tom had installed, near the magnet derrick, a switch that could be pulled out, cutting off all the electricity. In a moment Ned had reached this, and with one motion had severed the connection between the copper points. At once the sparks ceased snapping around Tom Swift.

Naturally the cutting off of the current from the derrick windlass at the main switch also deprived the magnet of its power and the big weight, representing a wreck, dropped back to the bottom of the tank with a mighty splash.

"A failure!" grumbled Harburg. "I was afraid of this!"

"No failure at all!" suddenly cried Tom. "It's just a mishap that I can remedy in a few minutes."

He bent over the maze of wires leading into the motor that operated the derrick. Ned climbed up beside the inventor and anxiously inquired:

"What happened, Tom? Did that midnight raider tamper with the machinery and set it to injure you when you switched on the derrick current?"

"That's what I thought had happened when those sparks shot out," Tom answered. "But I see my mistake now."

"Your mistake?" murmured Ned questioningly.

"Yes, I mean it was one mistake to think someone other than myself was responsible for this. It was another mistake to connect up the derrick as I have it. There's a short circuit and that caused the sparks. Luckily I had a fuse in or I

might have burned out the whole works."

Turning to address Harburg and others in the little throng about the tank, Tom said:

"There will be a little delay but nothing serious has happened. It was a display of electrical fireworks, that's all. I'm not in the least injured, though I did get a slight shock. The machinery of my giant magnet isn't damaged and I'll soon have it working again. Mr. Jackson, will you please come up and give me a hand?" Tom requested.

"Do you think you can make it work?" asked Harburg.

"I'm sure I can," said Tom confidently. "I'll change the wiring in about five minutes and then I'll lift the wreck for you," and he pointed to the simulated vessel in the tank.

It took a little longer than Tom's stipulated five minutes to make the necessary changes, but it was not much longer than that before he said:

"We are now ready for the test and this time it will succeed."

Once more there was an almost breathless silence as Tom lowered the magnetic disk into the tank. As before, when it was within a short distance of the submerged mass, the power of the current was sufficient to cause the "wreck" to leap up and cling to the disk. There was some applause at this, but it was nothing more than had been done before. The real test would come when Tom attempted to lift the weight from the tank.

"Now for it," murmured the inventor as his hand sought the switch, the wiring of which had been altered. "The heaviest pull will come on the derrick when I get the wreck partway out of the water."

As every schoolboy knows, a weight wholly submerged is much easier to lift than one out of water. The pressure of water, at any depth, is about equal in all directions—that is, there is an upward push as well as a downward push. Perhaps the downward push is not as great, as the weight of the water from above must be taken into consideration. If you have ever lifted a large stone from the bottom of a pond you will remember that it was much easier to handle under water than when you took it to the top. It was the same with this weight Tom was hoping to raise by his magnet.

Slowly moving the rheostat switch, Tom let more and more power flow into the derrick windlass. He looked to see if any sparks flew out from a short circuit, but none did.

"I guess I'm going to do it," he murmured.

The cables creaked in the pulley sheaves, and then, as the motor hummed and purred, the great weight slowly began to ascend in the tank.

The weight of the submerged “wreck” was great only in proportion to the power of the model magnet. In reality the weight was not more than a ton. Tom knew that if the small-sized submarine magnet he had made as a working model would lift a ton, the big one he intended to construct, based on the same principles, would lift many thousands of tons. So he watched anxiously how the model apparatus behaved.

Slowly, as more and more power was turned on, the derrick lifted the submerged weight. As soon as it broke water there would be a greater strain, and this Tom somewhat feared.

“Now for it!” he murmured as he pushed the rheostat handle over to almost the last segment. “Will it succeed or fail?”

He had his answer a moment later, as did all those observing the test. With as much apparent ease as it had lifted the weight to the surface of the water in the tank, the magnet and derrick now pulled it completely up, and as a shower of drops splattered from the “wreck” into the tank, Tom swung the derrick out over the side, and, in theory at least, a sunken ship had been raised from the sea bottom.

“Good!” cried Harburg. “She works!”

“Yes,” said Tom quietly, though his heart was beating fast in exultation at his success, “my submarine magnet works. But I’ll give it another and harder test.”

He lowered the ton of old iron to the floor of the shop outside the tank. Then, at his direction, workmen fastened a considerable number of lengths of “pig” iron to the “wreck,” making it heavier by about fifty per cent.

“This is an overload,” Tom explained, “but my magnet ought to be able to handle it. If it does, I’ll be satisfied.”

Again he turned on the power. Again the derrick lifted the weight, which the magnet had not yet relinquished. The “wreck,” with the added weight, was once more deposited in the tank.

“Now for it!” murmured Tom again. He had cut off the magnetic current, and now he switched it on again. This time he gave the magnet almost the limit of electricity. As before, the simulated, submerged vessel fairly leaped up, clinging to the disk.

Then Tom operated the derrick. Though the cables strained ominously, and the pulleys seemed to shriek out in protest, nothing gave way and before the eyes of the admiring crowd Tom’s machine solved the problem, and raised the added weight, depositing it outside the tank.

“Well, are you satisfied now?” asked Ned.

“Yes, I think I am,” Tom answered. “Of course, I may run up against some problems when I come to manufacture the full-sized magnet, but I think I can solve them. At any rate, now that I have found out my wiring mistake, this test has succeeded.”

“I’m more than satisfied,” said Harburg. “The only thing that is worrying me now is the time element. Can you make me two magnets that I can soon put to actual use? The summer is fast slipping away.”

“I’ll start three shifts on production at once!” Tom promised. “I’ll work the men in three eight hour periods. We’ll keep the shop open all night and rush this job through for you.”

“Well, I can’t ask any more than that,” agreed the salvager of ocean wrecks.

To make assurance doubly sure, Tom gave his model another test through which it came with a perfect score. Then, as he gave the word to dismantle the apparatus, and told Mr. Jackson to at once start the production of the full-sized machines, Tom turned to Ned and said:

“I think we ought to make some money now.”

“Yes,” agreed the manager. “We’re getting some already from the junk magnets and with the submarine magnets in operation we ought to take in more. Only there’s a sort of gamble in it.”

“A gamble? What do you mean?”

“Well, nothing like cards or horse racing,” said Ned with a smile. “But you know as well as I do, that fishing around for wrecks on the bottom of the sea is an uncertain business.”

“Yes, I suppose so,” Tom agreed. “But Harburg claims to know just where the wrecks are that he intends to raise. He has one of them marked by floats so he can take the barges with the magnets on directly to the place.”

“That may be. But even expert salvagers have been baffled by the fact that almost over night shifting sands may cover a wreck they have marked, or ocean currents may move it. So, as I say, it’s a gamble.”

“Yes, I suppose so,” Tom agreed. “In that sense the junk magnet, though it isn’t engaged in such a romantic trade, is more certain. We’ll have to take our chances as Harburg does.”

“Oh, sure. Another thing. Did you agree to supply the big barges, or floats, that will support your magnets and derricks at sea while searching for the wrecks?”

“No, Harburg supplies those. I understand he has two all ready for my magnets to be installed on as soon as I get them ready. That’s his end of the

business. He also has tugs to tow the barges."

"I'm glad to know that. I didn't see how we could very well go into the barge-building business."

"We couldn't. Well, we're going to be busy for some time now. I don't suppose I'll get much time to try to trace the thief who broke in and got my magnet plans."

"No, I suppose you won't," agreed Ned. "You'll not be able to get after the fellow who knocked you out and pushed you into the tank."

"Do you know," said Tom with a laugh, "I don't believe it was any person who knocked me out that time."

"Who was it, then?" asked Ned in surprise.

"I think I knocked myself out and just naturally fell into the tank."

"Knocked yourself out? What do you mean?"

Ned looked at Tom rather anxiously. For a second he feared that the inventor might have been working too hard and that his brain was playing him tricks.

"How could you knock yourself out, Tom?" he asked.

"With that," and Tom pointed to the rheostat switch of the derrick windlass.

Ned shook his head in bewilderment.

CHAPTER XIV

INTO THE LAKE

Tom Swift looked at his manager-chum and laughed, a sign of merriment which was not reflected on Ned Newton's face.

"Have you guessing, haven't I, Ned?" asked Tom.

"You surely have. What do you mean—knocked yourself out?"

"Well, it's this way," Tom explained. "You saw, a little while ago, that shower of sparks from the short circuit, didn't you?"

"Yes, and I was afraid you were done for."

"So was I, for a moment. I got a slight shock through a wire that had some faulty insulation on it, but that was nothing to the shock I got when I was knocked, or rather was pushed into the tank."

"Then no one did it?"

"Only myself. The wiring on the derrick windlass was, except in minor details, the same as it was just before the shower of sparks. I understand, now, just what happened."

"What?"

"Well, I turned the rheostat switch, got a shock through a short circuit that fairly knocked me out, and then, by reflex action I jumped, or fell, into the tank of water. It felt as if someone had hit me on the head. That was my first thought. I am sure, now, that it was my giant magnet, or rather, the small model, that was responsible for my mishap. I'm glad of it."

"Glad of it!" exclaimed Ned.

"Yes," replied Tom. "I mean, it removes the suspicion that some enemy sneaked in here and tried to knock me out. The explanation is perfectly natural in the light of what happened today."

"Well, I suppose it is a good thing to know just how it took place," Ned agreed. "So we have only one scoundrel to look for instead of two. I don't suppose you'll claim, Tom, that you robbed yourself of that set of magnet plans and specifications, will you?"

"No, I won't go as far as that," Tom admitted with a chuckle. "That

midnight raider was real enough. He doped me and got my plans. But if we work fast enough we can beat him out. Once my giant magnet is completed and at work, I can stop infringements of my patent in the courts. I'm not worrying much about that, but I'd like to know who it was."

"Do you suspect anyone?"

"Yes, I do, but it wouldn't be fair to mention any names. And now that I have removed one suspicion, and have only one left to work on, I'm going to lay that aside and jump into the building of my full-size submarine magnets—two of them to start with and more later."

"It's one of the best things you ever turned out, Tom," Ned exclaimed fervently.

"Glad you think so. I hope it will prove practicable."

Neither of the young men realized, then, what a great service Tom Swift's giant magnet was to perform for humanity.

Smoke from many stacks, the hum of many wheels, the throb of motors and dynamos night and day in the great Swift works told, better than anything else, of the progress of making the two big magnets to be used for sea salvage operations.

As Tom had promised, three shifts of men, working night and day, soon had production so well along that within two weeks after the final test of the model one of the big magnets was ready to be mounted on a flat car for a practical test. On this same car, and another like it, the two magnets, with the lifting derricks, would be run to Turtle Bay on the New England coast. Here they would be transferred to great barges and towed out to sea to raise a certain wreck which Harburg said he had marked down as the first of several he intended to raise for the salvage and treasure that might be in them.

As Tom Swift had predicted, he ran into a few difficulties of a technical nature when he had his workmen start building a full-sized submarine magnet. There was the problem of proper wire to be used, the problem of adequate insulation and the problem of rheostat switches. However, Tom met each problem as it came up, and though some were hard to work out, particularly one which concerned insulation for under-water work, he finally solved them. At last one night Mr. Jackson came to the laboratory of the inventor, a pleased smile on his face.

"I hope nothing is wrong," Tom remarked, looking up from a sheet of intricate calculations on which he was working; for Mr. Jackson sometimes had a habit of smiling when he was most concerned.

"Nothing but good news," was the answer.

“What is it?”

“We’ll have the first of the giant submarine magnets completed by morning.”

“Good! Then we can have a practical test.”

“Yes. I was coming to ask you about that. Where do you propose to have that test?”

“How about Lake Carlopa? You know we have a track spur down along that arm of the lake, near the bridge on the new state highway. We can take a lot of pig iron and other metal junk, bind it together with wire cables, dump it in the lake and haul it out. Of course, we can’t do more than approximate the weight of a sunken vessel, but we don’t need to use much power and it will be in the nature of a test.”

“Yes, I think so,” Mr. Jackson agreed. “Do you want me to go ahead and dump the junk?”

“If you will, please. Don’t dump it where it will interfere with boat navigation. I may have to drop it back there again after I lift it up with my magnet.”

“I’ll put it on this side of the bridge, near the new highway. The boats all go under the bridge at the centre span, so it won’t be in the way.”

“That’s all right. I’m glad we’re a little ahead of schedule. That fellow Harburg keeps close on my trail. He telephones twice a day and when he doesn’t do that he sends me a wire from Turtle Bay, asking when he can expect the magnets.”

“Somewhat of a nuisance,” agreed Mr. Jackson. “Turtle Bay is where he has located a wreck, I take it?”

“Yes,” Tom replied. Then the voice of his wife floated through the laboratory. Entering she asked:

“What’s this I hear about Turtle Bay?”

“It’s where we are going to make a practical test of the giant submarine magnets,” Tom said. “Going to raise a wreck there for Mr. Harburg. Why do you ask, Mary?”

“Because of this,” she answered, holding out a letter. “It’s from my cousin. Lieutenant Nestor,” she went on. “He writes me making a last appeal, or, rather, sending you and me a last invitation to come to see the test of the S.V.J. 13. Not that I could go aboard,” said Mary, “but he’d like to have you come, Tom.”

“I’m afraid it’s impossible, Mary, much as I’d like to go. I must rush work on the magnets. But I still don’t understand what Turtle Bay has to do with it.”

“Oh, I guess I forgot to tell you,” said Mary with a laugh. “They are going to test the submarine there.”

“Well, then, maybe I’ll see the tests, though not as a guest on board,” Tom said. “When you write to your cousin please tell him how sorry I am that I can’t accept his invitation.”

“I shall. How is the submarine magnet coming along, Tom?”

“Fine! We’ll have a practical test tomorrow.”

“Oh, then I must come and see it. May I?”

“Certainly. Down near the new bridge on the state highway at Lake Carlopa.”

“I’ll be there!” Mary promised.

Mary left to write a letter to her cousin, and Tom went with Mr. Jackson to look at the final assembling of the last units of the giant magnet. He was well pleased with the speed of the work.

A double shift of men worked all that night to finish the magnet. By morning it was mounted on the railroad car with the lifting derrick, and run out of the Swift plant on a spur of railroad track that extended along Lake Carlopa for some distance. On this spur cars containing the raw materials used in the plant were often left, but now the rails were cleared for the test.

There was a short delay, as a sudden shower had come up. The waiting group was impatient, and the moment the rain slackened, they were eager to start.

“After all,” announced Ned, “we shouldn’t mind a little rain, when we’re supposed to work this giant magnet on the ocean. Out there one never knows what kind of weather will be experienced.”

“You’re right,” assented Mr. Harburg, who had arrived for the test. “Let’s get started.”

“Is everything ready?” asked Tom as they came from his office to take their places in an old day coach coupled to the flat car on which the derrick and magnet had been mounted.

“All ready,” replied Ned, who was supervising operations.

“Well, then, let’s go. Is the junk dumped in the lake, Mr. Jackson?”

“Yes, quite a pile of it. I hope the magnet will lift it.”

“I’m sure it will,” Tom said.

A small switch engine was to haul the two cars to the scene of the test. It was coupled to the derrick car and Tom gave the word to start. As the small engine tooted and sent out a cloud of steam and smoke, Mrs. Baggert, the

housekeeper, came running through the yard, having taken a short cut from the house.

“Wait! Wait!” she called, waving her apron like a signal flag. “He’s gone into the lake!”

“Who’s gone into the lake?” asked Tom.

“Your friend Mr. Damon! He was out riding just now in his new auto coupe over the state highway. Something went wrong, he crashed through the guard rails of the bridge and went into the lake. The police just telephoned. A state motorcycle police trooper was passing at the time and recognized Mr. Damon. He’s shut up in his coupe and it’s in the lake, Tom!”

CHAPTER XV

A PRACTICAL TEST

For an instant Tom Swift did not comprehend the bad news that Mrs. Baggert had brought him. He stared at her for a moment, saying not a word. Then he murmured:

"Mr. Damon?"

"Yes, Mr. Damon!" cried the housekeeper. "He's a prisoner inside his coupe at the bottom of the lake, Tom. Oh, can't you do something to save him?" she begged.

"I'm afraid it's too late," murmured Ned Newton.

"If we work fast we might save him!" cried Tom.

"How?" demanded the manager. "If he's at the bottom of the lake, in a closed coupe——"

"That's his only chance for life!" shouted Tom Swift. "The coupe is almost water-tight if the windows are entirely closed. There may be air enough in it to keep Mr. Damon alive until he can be hauled out."

"How can he be hauled out?" asked Ned, while Tom was making signals to the engineer of the little locomotive.

"I'm going to, with my giant magnet!" was the answer. "It will give us a practical test. If my apparatus is any good it ought to save Mr. Damon's life. Have you steam up?" he asked the engineer.

"A full head, yes, Mr. Swift."

"Then get to the state highway bridge as fast as you can make the run. It's a question of seconds and of life or death. Go on!"

With a warning toot of the whistle the engine started off, hauling the flat car with its great derrick and giant magnet, and the old coach containing Tom Swift and several of his workmen, toward the scene of the accident.

"Tom, you've certainly a great head on you!" murmured Ned as the short train rattled and swayed over the stretch of track. "To think of using your giant magnet at such a time!"

"No better time or opportunity in all the world for a test than this!"

exclaimed Tom. “I only hope that on account of the rain he had the windows closed,” he went on. “If they were open, he’ll die like a trapped rat, unless he can open a door and swim out. If only he had the windows closed!”

Gathering speed each second, the small locomotive was now rushing along the spur track faster than it had ever before made a trip. The fireman was shoveling in coal and the engineer, with his hand on the throttle, was using forced draft and watching the pointer on the steam gage.

“If you let her drop below three hundred I’ll pummel you with your own shovel after this is over, Jim,” he called to the fireman.

“She won’t drop, Bill,” was the answer.

The steam did not.

It was only a short run from the Swift yard to the state highway bridge but even that little distance was covered in record time. Engineer and fireman worked in unison to get the last revolutions from the driving wheels, the boiler roaring, the safety valve spluttering and the exhaust puffing out in gasping breaths as if the very valves knew the importance of haste.

The rain had ceased and as the little train neared the scene, Tom and his friends saw a great crowd gathered on the bridge and on the road approaches leading to it. A squad of state police, some on motorcycles, were endeavoring to keep the throng back from the scene of the accident which was at one end of the bridge close to where the railroad track ran, and near the very spot where Tom expected to conduct his test of raising a big mass of junk iron.

Some of the crowd had swarmed over the tracks and the fireman tooted the whistle frantically, warning them to get out of the way, as the engineer speeded up to make a sudden stop by the application of the air brakes.

“Haven’t they pulled him up yet?” Tom asked a state police officer. The train had come to a stop and Tom had leaped to the ground.

“Not yet, Mr. Swift. He’s down there in his car.”

The officer pointed to the water into which some of his comrades and volunteer helpers were delving with poles and ropes to which hooks had been attached.

“Did you see him go in?”

“Yes, I was riding over the bridge just as he drove past me. I happened to recognize him. He waved to me and I think that made him swerve. He took one hand off the steering wheel to wave. A second later I saw him crash through the guard rails. They are only temporary ones and not very strong. He went right into the lake. I telephoned headquarters at once and asked them to notify you as I knew you were a friend of his.”

“I’m glad you did. Tell me—were the windows closed tight?”

“I think they were,” the trooper answered.

“It’s his only hope,” Tom murmured.

“What are you going to do?” asked the officer as he and some of his comrades forced back the crowd. “What’s this—a new pulmotor?” He looked curiously at the apparatus.

“It’s a powerful magnet,” Tom said. “Maybe I can haul the auto up, with Mr. Damon in it, before it’s too late. Have you a pulmotor here?”

“One is on the way from headquarters.”

“Good!” Then Tom spoke to the engineer. “Put her up a little more,” he ordered, as he noticed that the magnet car was not quite opposite the place where the volunteers were fishing in vain for the submerged auto.

“Right, Mr. Swift,” was the answer.

A few puffs from the engine served to move the magnet car into the proper position and then Tom Swift took his place on the derrick platform, his hands ready to work the switches. On the car, in addition to the derrick and magnet, was a dynamo outfit—that is, a dynamo operated by a powerful gasoline engine—a complete unit ready to be installed on a salvaging barge.

The gasoline engine was already working, warming up to operate the dynamo so that the electric current was ready for Tom’s use.

“Get on the rail of the bridge, Ned,” Tom requested. “You can see, from there, how to signal me so I can get the magnet over the middle of Mr. Damon’s coupe. Luckily he has one of the new all-metal ones. He told me that was the kind he was going to buy. If I can get my magnet on the roof I’ll haul him up. I hope we’re not too late!”

Time was a vital element now.

The engineer had moved the train up until the derrick was exactly opposite the spot where the coupe had plunged through the bridge railing into Lake Carlopa. At this point the railroad tracks paralleled the state highway bridge, being carried over the water on their own trestle.

“One side there!” called the state trooper whom Tom knew. He was speaking to the crowd surrounding the rescue squad. “Get out of the way. We’re going to raise the auto!”

“With what?” asked one weary man who had been grappling in vain for some minutes with a rope and hook.

“With Tom Swift’s giant magnet!” was the reply. “One side now, and give him a chance!”

“It’s a desperate chance,” murmured Tom to Ned as he hastily glanced at his apparatus to see that all was in working order. “I don’t know whether we can save him or not.”

“He’s been down there a long time,” spoke Ned.

“If only the windows are closed!” thought Tom Swift.

Quickly he swung the magnet, on the end of the derrick boom, out over the water. Ned Newton, a way having been forced for him through the throng by the troopers, had taken his position on the bridge railing. He could look down through the water but could only dimly make out a black mass which he hoped was the coupe containing Mr. Damon.

Or was it only the dead body of the eccentric man in the auto?

“You’re over it!” suddenly cried Ned, taking a chance that the dark mass he saw was the car. “Lower away!”

“Lower away!” repeated Tom.

He shifted the controls, and the giant magnet plunged into the water while the wondering throng looked on. The other salvaging operations had been suspended to see what Tom Swift could do.

“How is it?” asked Tom on the car, handling the control switches. From where he stood he did not have as good a view of the place in the lake where the auto had plunged in as did Ned.

“A little to the left!” the manager directed, signalling with his hand.

“To the left!” repeated Tom, amid a tense silence that was broken only by the hum and throb of the gas engine and the dynamo. “How is it now?” he inquired a moment later.

“A little farther out into the lake.” Ned directed. “Then you’ll be right over the middle of the top.”

Tom slightly lowered the derrick boom from which the giant magnet was suspended by wire cables, the insulated electric wires carrying the current from the dynamo hanging beside the metal strands.

“How is it now?” asked the inventor.

“Right!” cried Ned. “Lower away and haul up!”

“Lower away and haul up!” murmured Tom automatically.

Quickly he let the magnet straight down by unwinding the windlass. Then, as he felt the disk touch the metal top of the coupe, Tom suddenly switched on the current. He saw the cables stiffen and knew that he had made a direct contact. He hoped it was over the middle of the coupe top so that when he pulled it up it would be level.

Turning more “juice” into the magnet to insure a good contact, Tom took hold of the switch that operated the derrick. Losing no time in experimental moves on the rheostat, Tom swung the switch over the segments which flashed the characteristic blue-green flame of the electric arc.

There was a whine of the dynamo as it took up the increased load. The pulley sheaves creaked and the wire cables tauted. Then there was a stir in the waters of the lake.

“He’s bringing it up!” a score of voices shouted. “Tom Swift is bringing up the auto!”

A moment later the top of the disk that formed the main part of the great magnet broke the water. The crowd cheered, but in subdued tones, for it might well be a death car that was being raised.

Then, as the windlass of the derrick continued to whirr, the top of the auto itself came into view. Up and up Tom hoisted the coupe.

“If only the magnet holds!” he thought. “If only the derrick doesn’t give way!”

But Tom Swift had not built his giant magnet to have it give out under so comparatively light a load as a small auto. Not when he expected it to raise great wrecks.

Up and up came the car from the depths of the lake until it swung clear of the water. Tom’s glance told him that the windows were all closed. Then he had a glimpse of a man inside—Mr. Damon.

Was he dead or alive?

CHAPTER XVI

FLICKERING TONGUES

Held as in the clutch of a giant by the grip of the big, magnetic disk, the coupe, with its occupant inside, was swung over to the bridge beside the railroad tracks on which stood the train carrying Tom Swift's latest invention.

"Clear the way!" cried Tom, still at the controls. "I'm going to lower the car. Then get Mr. Damon out as soon as you can! He may be saved yet. Is the pulmotor ready?"

"All ready!" answered one of the state troopers while others, with frantic commands, augmented by pushing of motorcycles into the crowd, got enough space cleared so that the car could be lowered.

Working quickly, yet with caution, Tom, having the coupe suspended above the cleared space, lowered the auto. Water was pouring from the inside around the door joints, but Tom noted that the coupe was far from being filled, so slowly had the water seeped in. There was yet hope for his friend.

Many hands, Ned Newton's among them, aided in the rescue. Tom leaped down from his perch on the derrick platform where he had worked the switches and was there when the door on the left was opened and Mr. Damon lifted out. He appeared to be unconscious; his form was limp.

"I'm afraid he's done for!" a trooper murmured.

"Where's that pulmotor?" cried another.

"I don't believe you'll need it," Tom said. "He's coming to. I can see him breathing."

"That's right!" agreed Ned.

The good news was true. Partly unconscious, because of having exhausted most of the oxygen inside the closed coupe, Mr. Damon quickly revived as soon as he was in the fresh air. He had been placed on some lap robes kindly furnished by several autoists who had gathered at the scene. Now he arose to a sitting position and looked about him, rather dazed, it is true, but alive and quickly recovering.

"Bless my insurance policy, Tom Swift!" murmured the eccentric man as

he caught a glimpse of the inventor. “Are you hurt?”

“I guess it’s the other way around,” Tom said with a laugh which had in it an uncertain quality of mirth. “I ought to ask you that.”

“Bless my new car!” gasped Mr. Damon. “I remember that something went wrong. I lost control, I heard a crash and when I saw you, just now, I thought I might have run you down.”

“Your new car was the cause of the accident,” went on Tom, “but you didn’t run me down or anyone else. You crashed through the bridge railing and went into the lake.”

“Into the lake!” cried Mr. Damon. “Bless my——” The thought of what might have happened deprived him, for once, of some object on which to bestow his good wishes.

“You might be in the lake yet, though we were doing our best to rescue you, if it hadn’t been for Tom Swift and his giant magnet!” exclaimed a trooper.

“What’s that?” demanded Mr. Damon. “In the lake? Your giant magnet, Tom? Is it the same one that tore away my cane and pulled my money out of my pocket?”

“Not the same,” Tom said, “but a branch of the same family. A lot has happened since that day. But are you all right?”

“It seems so,” was the answer. “I don’t believe any bones are broken, but I feel rather shaken up, as though I had been pulled through a knot hole.”

“Well, Tom Swift pulled you out all right,” said another trooper.

Briefly the rescue was detailed to Mr. Damon, and the fervent manner in which he gripped Tom’s hand told more than could mere words what were his feelings toward his young friend.

“I can’t understand why I wasn’t drowned or killed when my car crashed through the bridge railing,” Mr. Damon remarked as he walked rather gingerly toward his dripping coupe.

“For one thing, the railing was a frail, temporary one,” Tom said. “For another, the windows of your car were all closed, and though it isn’t actually water-tight the water leaked in so slowly that you weren’t at once drowned. There was air enough to keep you alive until I could get my magnet operating. The fact that you must have been stunned by the crash was also in your favor as, being semi-conscious, you didn’t need so much oxygen to breathe.”

“I can’t understand,” said Mr. Damon, “how you managed to get your big magnet and all this apparatus here from your shop to the scene of the accident in time to save me.”

“It was a lucky chance,” Tom said. “I was on my way here to make a test of my magnet when we had word of your mishap. So I just speeded up and got here a little quicker.”

“Bless my rubber boots! It was like you, Tom, not to lose any time. I’m afraid I gave you a lot of trouble by my carelessness in trying out my new car.”

“On the contrary,” Tom said with a smile, “your mishap gave me a chance to give a practical demonstration of my giant magnet. Not a conclusive test,” he added, “for your car isn’t as heavy a ‘wreck’ as we expect to raise. But it was a good test.”

“Is my car much damaged?” asked the eccentric man. He could not get a good view of it because of the milling throng.

“Hardly hurt at all,” a trooper reported. “It’s a bit scratched and you may need new front mud-guards. The railing was so light it didn’t offer much resistance. If you come along a couple of weeks from now, when the iron railing will be in place, you may not get off as easily if you try to crash through.”

“Don’t be alarmed, I’m not going to try it!” said Mr. Damon. “Well, I’m much obliged to everybody who helped me,” he went on. “Now I had better go home, I guess. My wife may hear about this and think it is worse than it is. But I don’t feel like driving and my car may not work.”

“I shouldn’t take any chances,” a trooper said. “I’ll take you home in my side-car and send a garage man to look after your coupe.”

“Thanks,” murmured Mr. Damon. “I’ll see you again, Tom,” he called as he was escorted through the crowd. “I hope your giant magnet is a success.”

“I think it will be,” answered the inventor.

“I’m sure it will be!” exclaimed Harburg, who had witnessed with interest what had taken place. “Outside of the depth of water and the weight of the car, you have duplicated, Mr. Swift, what I hope to do in Turtle Bay.”

“Well, I’m going to give you a more conclusive test now,” Tom said. “I’ll pull up the junk we have planted just a little farther out.”

Most of the crowd, attracted by the news of the accident, remained to see a further test made of the giant magnet. The short train of an engine and two cars was run a little farther along the track, opposite the place where, in deep water, had been placed a great mass of junk and pig iron bound together with wire cables to represent the submerged wreck of a steamer.

“Even this weight is nothing compared to what I expect to lift in real salvage operations,” Tom explained to the wreck-seeker. “If I can lift this weight, using only a quarter of my power, I shall expect to lift four times as

much when I use it all."

"That's logical," said Harburg. "Now let's see how it works."

After having lifted the coupe out, Tom felt quite confident of the success of this real testing job. His magnet and derrick did not disappoint him. A short time after the big magnet had been lowered into the lake it picked up the mass of junk.

Then, as he had stated, Tom, using less than a fourth of the available power, brought to the surface the heterogeneous mass and swung it into shallow water near shore, as he expected to do later with a real wreck. At that time, of course, the derricks and magnets would be on immense floating barges instead of on railroad cars.

"Well, are you satisfied, Mr. Harburg?" Tom asked the salvager as the test was completed.

"Very much so. I am ready to make the second payment and I shall make the other payments as soon as more completed, full-size magnets are delivered to me. Can this one be shipped to Turtle Bay at once?"

"Yes, and the other will follow inside of a week. It is almost finished."

"Good! I'll wire my crew to get ready to raise the *Sea Horse*."

Giving orders to his workmen to get ready to ship the first one of the two giant submarine magnets to Turtle Bay, Tom went back to his shop with Ned to rush work on the remaining unit. In all, half a dozen were to be made, but it was necessary to rush two to Turtle Bay so advantage might be taken of the good weather prevailing.

That night Tom was in his laboratory working over some drawings that embodied minor improvements in his magnets, when he became aware of crackling sounds in the far end of his experimental shop. It was late—much later than he had supposed as he looked at a clock. Suspicious, due to what had happened in the past, Tom quickly arose from his desk to investigate.

As he turned, Tom saw leaping, yellow tongues of flickering flames in one corner of the shop where he kept various plans and specifications in a steel cabinet.

"They're trying to burn me out!" he cried. Then he shouted an alarm:

"Fire! Fire! Fire!"

CHAPTER XVII

KOKU GETS THE REST

Thought was not quicker than Tom Swift, as shouting, he sprang to the signalling apparatus which would instantly transmit the alarm to every part of the plant, summoning those always on guard against such an emergency.

"Bad work, this!" muttered Tom as he pulled down the operating handle and listened to the click and buzz of the apparatus which rang the ominous warning. "Somebody is trying to hamper me in this giant magnet business. If it's Harburg, and if he thinks he can make me forfeit on his contract, I'll show him he's wrong."

Tom did not stop with merely shouting the alarm nor with turning one in over the plant system. Another look at the blaze in the corner showed it to be gaining rapidly.

"Somebody must have sprinkled oil or gasoline around!" thought Tom as he rushed to pull down a portable chemical extinguisher from its hook on the wall.

It was the work of but an instant to up-end the copper cylinder and direct the short nozzle and rubber hose at the blaze. Out spurted a white, frothing stream that hissed as it struck the leaping, vicious yellow tongues of fire.

"I'll put it out myself!" thought Tom as he listened to the tinkle of the bell in the alarm box, which showed that an answer had been sent in from one of the watchmen. It meant that help was on the way. Scarcely had one return signal been sounded than another came in over the wires.

"We'll get the best of these rascals yet!" Tom muttered, spraying the chemical extinguisher stream upon the flames. "There'll be plenty of help soon!"

Then a strange limpness and faintness overcame the inventor. He could not account for it, but his legs felt weak. He staggered about, trying to maintain an upright position. He tried to force his attention upon directing the thin, white stream, but he felt all power leaving not only his brain but also his muscles.

"They—they've got me!" he gasped. "Dope again! Must have been something in—in the fire! I—I'm all in!"

The extinguisher, only half emptied, fell from the slack hands of Tom Swift. A moment later he crumpled up in a heap in front of the fire, which though partly out began to spring up into new life as the inventor fell to the floor.

In vain Tom tried to force his benumbed brain to function. He seemed to be in some horrible dream, or nightmare, in which he fought and struggled against powerful but unseen enemies. He felt as though he were running a race, but, though his legs went like pistons, he made no progress.

"I must get up! I must fight this fire!" Tom tried to tell himself.

Then a cloud of blackness seemed to fall, like some choking curtain, all about the inventor. He thought it might be the smoke, but it was unconsciousness overcoming him.

How long he remained in this state Tom did not know. From subsequent events he knew it could not have been very long. The first thing he remembered, and saw, after his lapse into a state of coma, were several of his night watchmen, each with a fire extinguisher, grouped around him as he was stretched out on a couch in his private office.

"The fire! The fire!" gasped Tom. "Put it out!"

"It *is* out, Mr. Swift!" said Parker, watchman in the casting shop. Parker held a length of hose he had unreeled from the wall, but it spurted no water, as it had not been necessary to turn on the stream.

"The fire is out?"

"You put it out," Parker went on. "When we got here it was just smoldering."

"I knew I had it about half way out," Tom said, sitting up, for now his head was rapidly clearing and he felt like himself again. "Then, all of a sudden, when my extinguisher was only partly empty, I—I fainted."

"Yes, we found you in front of the fire near your cabinet," said Javison, another watchman. "When you fell you dropped the extinguisher in such a way that the nozzle was still aimed at the blaze. Being automatic, the extinguisher went right on working so the blaze was out when we came in. We sprayed on a little more chemicals to make sure."

"Good!" Tom exclaimed. "That wasn't so bad. But is much damage done to my plans?"

"No," he was told. "The fire didn't get to the filing cabinet. It was mostly among some oil-soaked rags and paper."

"It was more than just an ordinary fire among oiled rags and papers," Tom declared. "There was a queer smell that knocked me out. I think some dope

was used."

"I noticed a queer smell," Parker admitted. "I opened all the windows," he went on, "to clear the air. But are you all right, Mr. Swift?"

"Well, I'm feeling better," Tom said. "I'd like to make sure no damage was done by these scoundrels. I think I can walk now."

"Drink this," said another watchman, holding out a thermos bottle. "It's hot, strong, black coffee. I brought it for my midnight lunch, but you're welcome to it."

"Thanks," Tom murmured. "That ought to clear my head."

The strong coffee did, and he was soon feeling much better.

Then Tom went with his men to inspect the place of the fire. It was as the watchman had said. A pile of oiled rags had been set ablaze and had ignited the wooden wall of the shop before Tom could get the stream of his extinguisher upon it. The fire was creeping toward the cabinet which, being of thin metal, might soon have been melted in the intense heat, had not action been taken in time.

"If the cabinet had gone," mused Tom, "I should have lost considerable. Not only are the plans for my giant magnets in there, but also the preliminary sketches for a new apparatus I am working on. I'd like to know who is at the bottom of this."

"I should think," spoke Parker, "that it would be the same scoundrel who stole your other plans."

"Probably," Tom agreed. "The same fellow Koku so nearly caught when my giant tore part of the coat and trousers off the rascal. But where is Koku now?"

"I haven't seen him," Parker said.

The other watchmen declared they had seen nothing of the giant when they came running to the private laboratory in answer to the fire alarm.

"Koku was supposed to be on night patrol around my office," said the inventor. "That's his job since these suspicious happenings have been taking place. I wonder what could have become of him?"

"Maybe the rascal who set the fire did away with Koku," suggested Thornton, a new watchman from the blue print shop.

"It would take more than one scoundrel to do away with Koku," declared Tom. "That is, unless he came upon my giant asleep and shot or chloroformed him. I don't believe Koku went to sleep, though."

"He is too faithful for that," Parker said. "What do you want us to do now,

Mr. Swift? Get the police?”

“No,” Tom answered after a little thought. “I believe I can solve this mystery myself. If we call in the police it will be known all over Shopton by morning and the rascal will be laughing at us. Then, too, I’d just as soon Harburg wouldn’t know of it.”

To himself Tom Swift added:

“That is, if he doesn’t know it already. I’m suspicious of that man. I don’t like him.”

“Then what shall we do?” asked Parker.

“Take a look around the yard,” ordered Tom. “The gates are all locked and the high fence can’t be scaled. The fellow may be inside yet. I shall have to turn on the power if this keeps up.”

Tom’s fence could be charged with a powerful current of electricity, if necessary. He had been obliged to set up this safeguard once when some unscrupulous men had sought to get a certain secret from him.

“Even without the fence being charged, how could the rascal get in without being detected?” one watchman wanted to know.

“He might have come in hidden in a load on a delivery truck,” Tom suggested. “We haven’t been very strict of late, but we shall be from now on. If the fellow is on the premises he may not have had time to get out. That blaze hadn’t been going very long before I heard the crackle of the flames, smelled smoke and saw the tongues of fire. The rascal may still be inside the fence.”

“Then we’ll find him!” declared Parker.

“And find Koku, too, if you can,” begged Tom.

As the watchmen were leaving the laboratory office, there could be heard in the corridor outside the sound of scuffling feet. Then the voice of the giant, Koku, boomed out:

“I catch um! I got um! Koku get rest of um!”

Another voice uttered a cry of pain, saying:

“Don’t! Don’t! I give up!”

CHAPTER XVIII

OFF TO TURTLE BAY

"Koku has him!" cried Parker.

"Bring the rascal in!" shouted Variden, watchman from the brass shop.

"I got um!" boomed Koku again. "I got rest of um now!"

Once more came a cry of anguish and a plea for mercy.

"Don't kill him!" cried Tom, suddenly realizing what Koku might mean by having secured the "rest of um." The giant was capable of killing a man with his bare hands.

A moment later the door was pushed open and there stood Koku, holding in one hand, by the back of his neck, and swinging him clear of the ground, a much battered and disheveled man. At sight of him Tom cried:

"Dunberry! So it's you!"

"Koku get um!" boomed the giant, easily holding in his left hand the struggling man, while in his other hand Koku displayed some pieces of cloth. Tom at once recognized them as part of the coat and trousers his faithful servant had, some time before, ripped from a fleeing scoundrel who got away. "Koku get part of um one night," went on the big native, laughing at the prisoner's futile struggles to free himself. "Tonight Koku get rest of um!"

Tom understood, now, what his giant meant. He formerly had secured part of his man—a very small part—but his vigilance had been rewarded and now he had the remainder—in reality, the biggest part.

"See!" Koku went on, turning his captive about face. "Koku get part one time an' now get um all."

Dunberry's coat showed where a piece of cloth, different in pattern from the original goods, had been sewed on. His trousers, too, were repaired in like manner.

"See how um fit!" chuckled Koku as he laid upon the back of the captive the torn-away pieces of cloth. The jagged line of the tears showed plainly that the present wearer of the garments had been the man Koku so nearly caught the night Tom was drugged.

“How did it happen?” Tom asked his giant.

“Let me down and I’ll tell you everything!” whined Dunberry, whom Tom and some of his watchmen recognized as a former employee who had been discharged, sometime before, for stealing. “Tell him to put me down, Mr. Swift. Then I’ll talk. Your giant is choking me!”

“Ease up on him, Koku,” directed Tom. “Then tell me what happened, Koku. I’ll hear your story later,” he said with significant emphasis to Dunberry. “Go ahead, Koku.”

“Well,” began the giant, as he lowered Dunberry to the ground, still keeping a restraining hand on him, “Koku hear fire alarm an’ he come runnin’ like a horse racer. When Koku get to door of master’s shop Koku see man come out. Koku try to catch but man he slippery like fish you call eel so he get ’way.

“But Koku run after him. It very dark—Koku fall down, get up—no can see man. But then keep on—run all around—fall down some more—then he see barrel move all by umself. Koku know barrel not have wheels like auto, so then t’ink mebby man hide in barrel. So it be. Koku bust open barrel with um’s fist an’ pull out man all same like you take nut out of shell. Um try to get ’way but Koku hold tight fast an’ so catch rest of um.”

“Indeed you did get the rest of the man we’ve been looking for so long,” agreed Tom with a grim laugh. “Now then, Dunberry, explain yourself.”

The former workman was sullenly silent a few moments. Then he blurted out:

“Well, I haven’t any excuse except that I wanted to get even with you for firing me.”

“You deserved to be fired!” snapped Tom.

“Maybe so, but it didn’t make me feel any better to think of that so I made up my mind to get square, and I almost did.”

“Almost but not quite,” Tom replied. “Was it you who doped me and made away with my magnet drawings?”

“Yes, but I didn’t intend to use them myself nor let anyone else use them. I was going to hold them and make you pay a reward for their return. I wouldn’t have sold them.”

“I’m not so sure of that,” said Tom. “I didn’t receive any offer of a return of my plans for a reward.”

“I sent you two letters, but maybe you didn’t get them,” mumbled Dunberry. “Then I thought you were indifferent so I decided on bolder measures.”

“You mean you started this fire?” asked Tom sternly.

“Yes. I didn’t mean it to do any great damage, though!” Dunberry made haste to say. “I only wanted to cause confusion so I could take more plans from your cabinet. I hid myself in this shop during the day and came out behind you when I saw you were so busy.”

“I suppose you put some dope on the oiled rags you fired to knock me out so I’d be burned to death!” said Tom. “I’ll see that you get the punishment you deserve.”

“No, Mr. Swift! No!” cried the man. “I vow I didn’t intend to harm you. I only wanted to get some more plans and then I would have put out the fire myself.”

“You put some dope in it to overcome me!” said Tom, angrily.

“No, I didn’t! Honest I didn’t, Mr. Swift. I stayed long enough to see you spray the chemical stream on and then I knew my plans had fallen through as the blaze was too small to get a start after what you did.”

“But I fell unconscious,” Tom said. “It must have been some dope you put in the fire.”

“No, I didn’t do that. I’m not quite as bad as that. What happened, I think, is that the chemical stream must have given off overpowering fumes as it struck the burning, oiled rags. There was a chemical reaction that I had nothing to do with.”

“Well, I’ll give you the benefit of the doubt there,” Tom said. “But you are guilty of arson and of robbery. It will go hard with you.”

“I suppose so,” muttered Dunberry. “But will it count in my favor, Mr. Swift, if I give you back the plans I stole?”

Tom felt sorry for the fellow, as he knew he had a wife and children to support. But his rascality must not go unpunished.

“I’ll bring the matter to the notice of the judge when you are up for sentence,” Tom promised. “He may be a bit easier with you if you give back the stolen plans.”

“I’ll see that you get them, Mr. Swift. I have them safe at my house. I’ll tell my wife where they are hidden and she will get them for you. But don’t blame her. She knows nothing of what a rascal I’ve been. I’m through now.”

“You’d better be,” Tom said cuttingly. “But I’m glad to see that you still have some decent feelings. Call the police, Parker,” he ordered, “and put this fellow in their charge. I’ll be over in the morning to make a complaint.”

Parker walked over to take Dunberry away from Koku, but the giant objected to giving up his prisoner.

“No!” he fairly shouted. “Koku catch part of um an’ then Koku catch rest of um. Koku no let him go.”

“The police will keep him safe, Koku,” said Tom.

It was only this assurance that made the giant release his hold of Dunberry. Even then Koku stayed around until he saw the prisoner definitely given in charge.

“Well, it’s been another strenuous night,” Tom remarked as, having made sure that no actual damage had been done to his plans, and that the fire was completely out, the inventor went to bed.

Next day he sent to Dunberry’s house and recovered the missing magnet plans. The man’s poor wife was overcome by shame and grief at what had happened.

“I can’t understand why Jim acted so!” she sobbed. “Oh, what are we to do! The poor children.”

Tom Swift was much affected, deeply as he resented the action of his former rascally employee.

“Don’t worry, Mrs. Dunberry,” he said. “I’ll see that you and the children don’t suffer. If Jim turns over a new leaf when—when he gets out, I’ll take him back to work for me.”

She sobbed her thanks as Tom left.

“I’m glad I didn’t make any cracks at accusing Harburg,” mused Tom. “I guess he isn’t as bad as I thought. But there were a number of suspicious things. I hope they’re ended now and that I can give my giant submarine magnets a real test.”

Two weeks later, a day earlier than he had promised to have it ready, the second of the big machines was shipped to Turtle Bay.

“Now,” Tom said to Ned, “we’ll pack up and head for there ourselves. I hope everything will be all right.”

“Same here,” assented Ned.

Mary came running out to say goodbye to her husband as he and his manager were ready to depart. Mr. Damon had hoped to go on this trip but his wife would not allow it.

“If you get a chance,” Mary suggested, “try to see the tests of the S.V.J. 13. My cousin wrote that he would be on the lookout for you since you had to be in Turtle Bay. The tests are to be made near there.”

“I’ll look for him,” Tom promised, little realizing how prophetic were his words.

CHAPTER XIX

CAUGHT IN THE STORM

Scores of men hurrying to and fro. The puffing of engines, the hum, throb and purr of dynamos and motors, orders being shouted back and forth, the clank of hammers and the clatter of metal.

These were but a few of the medley of sounds that greeted Tom Swift and Ned Newton. They were traveling in the electric runabout, the fastest car on the road, and were just arriving at the little town of Saltair on Turtle Bay. Most of the noise and apparent confusion was down at the water-front, where two ponderous barges were being fitted to receive the derricks and giant magnets Tom Swift had invented for use in the salvaging operations.

"Things are humming!" observed Ned as Tom slowed up his car to inquire the way to the small hotel, where they were to have their headquarters during the preparations.

"Looks as if Harburg meant business," Tom agreed. "He isn't losing any time."

"I guess what he said about the need of haste before rough, winter weather sets in, was right," went on Ned. "He has a big gang here."

"Sure has," assented the inventor. "Well, I guess that's our shack over there," and he pointed to a typical small, seaside hotel. "Let's see how they are going to put us up."

"I'd rather see what I am going to put down in the way of eats," remarked Ned. "I'm hungry."

"Now that you mention it, so am I!" admitted Tom.

The car was parked in the garage back of the Mansion House, which looked like anything except its name. Then Tom and Ned, having carried their own baggage to their rooms, (for the proprietor admitted he had no bell-hop), finished a hastily-eaten but good meal, much better than they had expected, and hurried down to the dock.

Moored there were two large barges and two powerful tugs. This was the marine equipment collected by Harburg for his salvaging operations. It was on

these barges that Tom Swift's magnets and the lifting derricks were being installed, and a corps of men from the Swift plant, together with many workmen hired by Harburg, were working fast to get everything in shape for a try at raising the wreck of the *Sea Horse*, which lay about two miles off shore.

As Tom and Ned went down to the docks, the sound of the shouting of commands and questions mingled more loudly with the din of machinery being set up and tested.

"Well, Mr. Swift, I'm glad you're here!" Harburg greeted the inventor and his chum. "We need your advice on setting up these derricks."

"Glad to give it," Tom answered. "Did the shipment from my shops get here in good shape?"

"Nothing seems to be missing," answered the salvager with a laugh. "Even your big giant is here in person, as well as your giant magnets."

"What!" cried Tom. "Koku here? I didn't send him!"

"Koku come anyhow!" boomed the voice of the giant as he came from behind one of the derricks on the barge nearest the dock. "Master maybe want Koku catch um again."

"I don't believe there'll be any catching to do, Koku, now that I have delivered the goods," said Tom. "Since you are here, we may find your strength useful."

"I've found it so already," remarked Harburg. "Koku has been doing the work of three men in lifting heavy weights and helping us to assemble the magnets."

"I'm glad of that. How did he get here?" Tom asked.

"He just sort of invited himself," remarked Gladmart, one of the men Tom had sent from his works. "We thought you might want him to come along, so I let him."

"Well, it's probably just as well you did," Tom chuckled. "I guess he had trouble getting in the seat of the railroad car, didn't he?"

"We tried to fit him in but he wouldn't fit!" said Gladmart with a laugh. "So we had to send him to the baggage car. He more than worked his passage, though, on the trip from Shopton to Turtle Bay."

"How's that?"

"Koku insisted on handling all the trunks, lifting the biggest of them with one hand. It amused the baggageman and kept Koku busy."

Tom and Ned laughed and Koku, seeing that his unauthorized appearance was taken in good part, redoubled his efforts to be of service.

Having seen that his own men were proceeding with the work according to instructions, and solving one or two small problems for the benefit of Harburg's crew, Tom took stock of the situation.

"Just what are your plans, now that all the equipment is on hand?" asked the inventor of the wreck-seeker.

"As soon as the derricks are properly braced, and we test out the generating machines and make sure the magnets work after having been shipped from your factory," was the reply, "I'm going to have the two tugs tow the barges out to the wreck. There they'll be anchored and we'll try to hoist the old ship up to the surface. Once off the bottom, I plan to sling the wreck in chain cables between the two barges and tow it into shallow water. Then, if I have luck, I'll reap the reward."

"Well, I hope you reap," said Tom, and he meant it. He had been paid a good price for these two giant submarine magnets, and he wanted them to do the work for which they were designed. The land magnets were a great success in the junk business.

"You and Mr. Newton will go along on one of the barges, of course," suggested Harburg. "We may need your help and advice, though the training you gave my men at your shop in handling the magnets would probably enable them to cope with anything that might come up. But I'd like to have you along."

"I planned to come," Tom said.

"I wouldn't miss it for a farm with a yellow dog," declared Ned.

"You'll find a cabin for your joint use on Barge A," went on the salvager. "Our accommodations aren't elaborate, but I've provided plenty of good food. We may have to stay out a week before we can raise the wreck," he added.

"I expect so," Tom said. "Though if you have the wreck marked with buoys it ought not to take long to attach the magnets. Of course, it may take considerable manipulating to get them fast at the right places fore and aft."

"I realize that," said Harburg. "I have the location of the wreck marked, but as I said before there is no telling what ocean currents may do, nor how the shifting sand on the bottom may trick us. So both barges are stocked with food enough for over a week."

"It will be a sort of picnic for me," chuckled Ned. "An ocean trip with nothing much to do."

"I'll see that you work your passage," Tom threatened.

Though things were humming on both barges and on the docks, which were littered with machinery and parts, considerable work yet remained to be

done before the giant magnets, with their lifting derricks, could be towed out to sea.

The salvaging outfit was not unlike that used by all wrecking concerns who do a business of raising sunken vessels. In the centre of each barge was a great lifting derrick, or crane, operated by electrical power. The electricity for the windlasses and the big magnets was generated on each barge by means of small but powerful gasoline engines, constructed in Tom's shops.

As the barges had to be big and broad, but of slight draught, they could not very well be operated by their own power. Consequently, they had to be towed, and two tugs, one for Barge A and one for Barge B, had been hired by Harburg.

Going aboard the barge which was to be his headquarters during the salvaging operations, Tom inspected the "stateroom" he and Ned were to share. It was plain but commodious, and a look into the "galley" showed a Negro cook whose smiling countenance gave promise of many good meals. In order to save the time of the men coming and going to work, they were quartered on the barges, which accounted for the cooks being on duty, though they were not yet at sea.

In the next few days Tom and Ned put in many busy hours, seeing that the various units of machinery were properly installed; Tom attending to the technical end and Ned seeing that the orders were carried out. Harburg showed that he knew his salvaging business and how to handle crews of husky, rough men, for he got more work out of them than Tom had believed possible. Tom's own crew from his shop needed no urging to do their best to make their employer's plans succeed.

There were one or two mistakes made and slight delays occurred. Once an important part of the machinery broke and Tom had to charter an airplane and fly back to Shopton to rush through a duplicate. Finally, after Harburg had fumed and fretted, declaring that everything was ruined, matters smoothed themselves out and the last rivet was headed up, the last cable cleated, the motors and dynamos had been tested, the derrick booms worked perfectly, the magnets came through with flying colors and at last the word was given:

"All aboard!"

"We're off!" cried Tom Swift.

"I hope we pull the wreck up from Davy Jones's locker!" added Ned.

The tugs had steam up, and after a hasty check, to make sure nothing had been forgotten, the signal was given and the barges were started on their seaward journey. It was evening when they cast off, and it was calculated that they would arrive by morning at the place where the *Sea Horse* wreck was

buoyed. Though the distance was not far, as miles are counted, the clumsy nature of the barges made the voyage a slow one.

So they left Turtle Bay to see what fate had in store for them.

Tom and Ned, after a tour of Barge A to make sure all they were responsible for was in shipshape, settled themselves in their "stateroom," if a compartment on a barge may be so called.

"Nice and snug," Ned commented.

"Very," Tom agreed. "Now I think I can eat. I've been so busy these last few days I haven't sat down to a meal," which was almost literally true. He had eaten "on the run," so to speak.

"Well, I hope our colored friend in the galley has plenty," observed Ned. "I'm a bit hungry myself."

Koku tapped on the door and in answer to Tom's question the giant said:

"Um say get it an' come."

"I guess he means come and get it!" chuckled Tom.

"Supper's ready," agreed Ned.

They ate heartily, with Harburg and some of his chief helpers. Then, as the inventor and his chum were tired, they turned in early.

It was Tom who awakened, some time around midnight, and sat up in his berth. A dim light glowed in the passage outside and he could see Ned slumbering. Then Tom realized what had awakened him from his sound sleep. It was the pitching and tossing of the great barge. No longer was she moving smoothly along in tow.

Then Tom heard the thunder of water on the deck above him. He heard orders being shouted, and the banging of loose machinery.

"Ned! Ned!" cried Tom. "Wake up!"

"Eh? What's the matter? Are we there?"

"No!" exclaimed Tom. "We're caught in a bad storm, and unless I'm much mistaken, we've broken loose from our tug! We'd better get up on deck!"

CHAPTER XX

AT THE WRECK

Ned Newton leaped from his bunk with such energy that, coupled with the pitching and tossing of the barge, he was catapulted across the space that separated him from Tom's sleeping quarters and deposited over the edge of the inventor's berth.

"Go easy!" cautioned Tom.

"That's easier said than done," Ned retorted. "Whew!" he whistled as he straightened up and listened to the howling of the wind and the smashing, thundering splash of waves on the deck above. "This is some storm!"

"You're right!" echoed Tom.

"Have we broken loose from the tug?"

"I think so, judging from the way we're heaving about and from the excited yells I heard on deck just as I woke up. We'd better take a look."

"Sure!" Ned agreed as he began to dress, reaching for his yellow oilskin coat, an example followed by Tom. "There's one consolation in being aboard a craft like this in a storm."

"What?"

"We can't sink," declared Ned. "These barges are as safe as anything can be."

"Yes," Tom agreed. "But if we get into a bad storm something is likely to be carried away. Those derricks are pretty tall and with the force of the wind on them, and the pitching and tossing they'll be subjected to, it wouldn't surprise me if some of the bed-plate bolts would pull out. A loose, swaying derrick, even on the deck of a barge that's as safe as this one, is no fun. I'm not afraid of sinking, but we can be pretty well mussed up if this wind continues."

"I didn't think of that," Ned admitted. "We'll hope for the best. Let's go!"

Reaching the deck, the young men found most, if not all of their fears, realized. They were in the grip of a sudden, fierce storm of almost tropical intensity, and the tow line between the barge and the tug had parted. However, quick work on the part of the crew had prevented any damage to the derrick

thus far, and as the giant magnet was well secured, that, too, had not suffered any harm.

"This is just what I was afraid of on account of the delay!" yelled Harburg, who, in a slicker, was stamping his way about the broad, heaving deck. "We'll be lucky if we can pick up the wreck after this blow. I was afraid the delay would run us into dirty weather."

"The delay couldn't be helped!" Tom shouted.

"Oh, I'm not blaming you, Mr. Swift. It's just my hard luck. But we may pull through."

"Is the tug going to try to pick us up?" asked Tom.

He looked ahead through the blinding midnight mist of flying spume, spray and pelting rain to where could be dimly made out the bobbing lights of the tug. From the fact that Tom could see the red and green lights he knew that the tug was headed toward them. From the rear no such lights could be observed as they were screened so the rays from them did not show "abaft the beam," as it is called—that is, at right angles to an imaginary line drawn amidships from bow to stern, the beam being the width of a vessel.

"Yes, I had them wirelessed as soon as I heard we had broken loose," said Harburg. "I gave orders for them to stand by to pick us up."

At Tom's suggestion the barges and tugs had been equipped with wireless outfits. Thus one vessel could communicate with another and make plans for the salvage work even when far apart. Tom's success, when he had sent a wireless message from Earthquake Island, made him resolve never to be without this modern marvel.

On deck Tom and Ned realized, as they had not done in their snug quarters below, the intensity of the storm. They were out now from the shelter of Turtle Bay and out upon the open ocean, getting the full effect of the late summer gale.

"Heard anything from Barge B?" Tom shouted into Harburg's ear. Any tone less than a shout could not have been heard in that turmoil of wind, rain, pelting waves and snapping spray.

"Yes, they're all right so far," answered the wreck-seeker. "They wanted to know if they should stand by, but I told them to keep on. The closer two clumsy vessels like these barges are in a storm the more dangerous it is for both."

Tom realized this, and strained his eyes to catch a glimpse of the other tug's lights or those of the barge she was towing. All about him was only darkness and storm, the blackness of the night but faintly illuminated by the

lights on Barge A.

Tom and Ned could see that the tug which had lost its tow was now approaching them gradually through the storm. There were whistle blasts from the steam vessel, answered by toots from the compressed air signalling apparatus of the barge. Captain Marsden of the tug and Captain Blaker of Barge A were trying to arrange for the pick-up, a dangerous task in a heavy sea such as was now running.

The wireless was snapping out its blue-sparked messages and Tom listened to the "talk."

"I'm going to come as close as I dare," signalled Captain Marsden, "and try to float you the end of the towing cable on a barrel. It's too risky to put a boat over and we can't heave the heavy wire rope."

"Right!" answered Captain Blaker. "We'll be on the watch."

"Better turn on your searchlight," suggested the tug commander. "I'm getting ready to swing about and put the barrel overboard. Hope you can pick it up."

"We'll be on the lookout," was the message that went crackling from the barge.

A moment later the storm-lashed ocean directly ahead of the barge was lighted by the glow of one of the powerful searchlights. Harburg had installed several of these, calculating that he might have night work.

The tug was to windward of the barge; that is, the wind, a powerful storm-gale, was blowing from the tug to the barge. It was the hope of Captain Marsden that the force of the wind, coupled with the wave currents, would cause the barrel bearing the end of the severed cable to come close enough to the barge to be taken aboard. It was the only chance in this riot of wind, rain and salty spume and spray.

"There she is!" cried Tom Swift as his keen eyes caught sight of the drifting barrel. "Dead ahead!"

"Stand by, men!" yelled Captain Blaker.

His husky crew went to the forward end of the barge, ready with boat hooks, rope nooses and whatever else they thought would be of service. The searchlight illuminated the bobbing barrel which buoyed up the end of the cable.

After several failures the barrel was made fast and the cable hauled aboard the barge. It was hard work, but no one complained. To make assurance doubly sure, as soon as one cable was aboard, another was bent to it and that, also, was made fast to the towing bitts, so that the barge was doubly secured

now.

Snapping, sparking wireless words told those on the tug that all had now been made fast. Once more the steam vessel began to plunge into head seas with her tow safe at her stern.

The storm kept up all night, increasing rather than decreasing in violence, and there was no more sleep for those aboard Barge A. Toward morning one of the cables parted, and then was demonstrated the wisdom of two. The second one held and with the coming of dawn the gale gradually blew itself out.

“Well, we came through pretty well,” remarked Harburg to Tom and Ned when they met at breakfast—a good breakfast in spite of the mishap.

“Yes,” Tom agreed. “I didn’t imagine we could get such a storm this early in the season.”

“Oh, you get bad blows, even in summer, off Turtle Bay,” said the wreck-seeker. “That’s why I was in such a hurry. I’m glad this storm happened while we were on our way, rather than after we had anchored at the wreck. We might have had to pull up anchors and run back to harbor if this had happened after we had made fast to the wreck.”

“There’s some consolation in that,” agreed Tom. “Do you think you can pick up your buoys?”

“I hope so,” was the answer. “If they’ve torn away or if the wreck has shifted, we’ll have our preliminary work to do all over again.”

Fate or luck was kind. As the morning sun rose higher and higher in the heavens, and Barge A approached the approximate position of the wreck, the lookout gave the joyful cry of:

“There she is!”

Tom and Ned saw several red barrel buoys bobbing about in the swell that remained as a souvenir of the storm.

“Good!” cried Harburg. “Now if the other barge shows up, we can start work.”

Anxious eyes scanned the heaving waters as they slowly approached the unseen wreck. What had happened to Barge B and her tug in the storm? This was a question Tom and all the others asked themselves.

CHAPTER XXI

BAD NEWS

"Stand by until we anchor!" was the wireless message Harburg sent from Barge A to the tug that had towed the unwieldy craft to the wreck. "Then go look for Barge B."

"Right!" signalled Captain Marsden. "Let me know where you want me to haul you."

"This is where you'll have to give us some advice, Tom Swift," said the salvager after reading this message. "That buoy marks the bow of the wreck," he said, indicating one with certain markings in black. "That one, marked in white, is over the stem. It is for you to say whether you want your giant magnet on this barge to raise the bow or stern."

"I think we'll take the stern," Tom said after a moment of thought. "This magnet and derrick are a little more powerful than those on Barge B, and the stern is likely to be the heaviest end of the wreck."

"Very good," assented Harburg, and he gave orders accordingly.

It took no small maneuvering to get the barge in just the right position, for the wind was still strong and the waves high. Captain Marsden was experienced and at last he had his tow just where she should be.

"Let go anchors!" cried Captain Blaker, and into the sea splashed the bow and stern "mud hooks," if a barge, shaped exactly alike fore and aft, can be said to have a bow and a stern.

"Now then, see what has happened to the other tug and barge," advised Harburg, as he saw that his craft was floating above the wreck. "I hope they haven't parted company." The wireless signals of Barge A to her sister craft were not answered.

Anxious hours passed before news came as to the whereabouts of the other half of the salvaging outfit. Harburg would have fretted and fumed more than he did save for the fact that there was work to be done. When Tom Swift realized that the salvager was so worried about the fate of the second tug and Barge B, the inventor said:

“We can save time by doing some preliminary work now, while waiting for news.”

“Then let’s do it!” Harburg cried. “I’m all upset with this delay. I didn’t count on a bad storm so soon.”

“I think we came out of it well,” Ned remarked.

“Yes, I admit we did. But where is my other outfit?”

No one could answer Harburg, and he was working himself into a highly nervous state when Tom’s suggestion acted as oil on troubled waters.

“We can fish around with the magnet we have,” suggested the inventor, “and see if we can get it attached to the stern of the wreck.”

“Maybe we can pull it up!” eagerly suggested Harburg.

Tom Swift shook his head negatively.

“No chance,” he said. “My magnets are powerful, but it will take two, one at bow and one at stern, to get this craft up.”

“Well, do whatever you think best,” agreed the salvage-seeker.

From this time on Tom Swift took charge of operations. He knew what his magnets and derricks could do better than did anyone else. Even though Harburg might know the location of treasure wrecks, it remained for the inventor to apply the practical operations of getting them to the surface.

Harburg had a drawing representing the sunken vessel which had gone to the bottom in some hundreds of feet of water a number of years before. There was said to be a large shipment of gold specie aboard. Several attempts had been made by divers to raise the old craft, but so far none had succeeded.

There was a heavy swell on, which made the barge anything but a pleasant perch from which to do work. As Tom had been at sea before, the motion did not bother him.

Taking charge of his own men and those whom Harburg had hired, Tom gave orders to lower over the side the big magnet, dangling from the end of the derrick boom which was made secure amidships. The derrick windlass unreeled the wire cables which slithered through the pulley sheaves, and then began the tiresome task of moving the disk about below the surface and out of sight until, by sensitive fingers held on the wire cables, Tom could tell when it had touched the wreck. More than once Tom thought he had made fast, but when a preliminary current was sent into the magnet it did not adhere.

“Must have been a submerged bit of an old wooden ship we touched,” Tom said, after several such futile efforts.

“Or maybe a whale!” chuckled Ned.

“If it was a whale I think we gave him a surprise,” Tom said. “Though I don’t know that he would get a charge of electricity after all, unless there’s a leak in my insulation. I hope such isn’t the case.”

The morning had nearly spent itself, with the weather growing more and more calm, before Tom at last felt sure his efforts to get the first of his giant magnets on the wreck had proven successful. Then he felt the tell-tale vibration that came up through the wire cables, and he cried exultantly:

“We’re fast!”

“Are you sure?” asked Ned.

“I’ll know in a moment!” Tom answered, as he turned a powerful current into the disk, and then revolved the windlass of the derrick slowly. The strain on the wire ropes told him he was at last on the sunken vessel, to the iron structure of which the disk now firmly clung.

“There she is!” cried Tom Swift. “We’ve a good hold!”

“But can’t you pull her up?” asked Harburg.

“Not yet, no. One magnet isn’t powerful enough, big as it is. But now that I have caught on, I’ll keep a constant current flowing into this magnet and it will hold fast until we can attach the other.”

“That is, if the other outfit ever gets here!” grumbled the salvager.

Anxious eyes again scanned the sea, which was fast calming down, and a little later came the welcome cry of the lookout:

“There she is!”

Progressing slowly toward them was the other tug towing Barge B. She was soon in wireless communication with her sister vessel, the captain explaining that they had been blown off their course in the storm and, the wireless having been crippled, no word of the mishap could be sent out until repairs had been made.

“But we’re all right now,” Tom said, as Barge B was anchored near the craft he and Ned were on. Both tugs anchored close by to be ready to give help if it should be needed.

With Barge A as a guide, those aboard Barge B had little difficulty in getting their magnet over the side and clamping it on the bow of the submerged wreck. Three attempts were all that were required.

By this time it was evening, and rather than start the actual raising operations in the dark, Harburg, reluctantly enough, gave orders to wait until morning.

The night hours were anxious ones for the salvager, Tom and Ned.

Naturally the inventor and his friends wanted to see the attempt succeed. It would be good publicity for the giant magnets.

With the first streak of dawn the crews were up, and after a hasty breakfast were ready to start work. Tom, directing operations, was about to give orders to start the derrick on Barge B while he took charge of the one on Barge A, when he was suddenly halted. The wireless operator came running from his cabin shouting:

“Bad news! Bad news!”

CHAPTER XXII

AN APPEAL FOR HELP

"Hold it!" called Tom to the operator on Barge B. The inventor stayed the hand he had been about to use to swing over the switch of the magnet and derrick he was controlling, and looked at the wireless man.

"Hold it!" automatically repeated the Barge B engineer.

There was a tense silence, everyone wondering what was portending. Many thought something had gone wrong with the apparatus—perhaps that one of the giant magnets had slipped from its cables and plunged to the bottom of the sea. A moment later the situation was understood as Tom asked:

"What's the bad news?"

"Some submarine, having a test out around here, is in trouble," answered the wireless operator.

"Submarine?" repeated Tom, and at once a great fear came into his heart. He almost anticipated the reply which came a moment later.

"Yes," continued the operator, "the new, big submarine—S.V.J. 13—is in trouble."

"How did you find out?" Tom asked while everyone waited tensely for the answer.

"Just caught the S.O.S. over my wireless," was the reply. "I jotted down part of the message," and he read from a paper in his hand: "Send wrecking crew at once. S.V.J. 13 on bottom—can't rise—men in peril. Haste urgent."

"What happened?" gasped Tom Swift and, even as he asked the question, his mind went to the parting words he had had with Mary, when she urged him to try to see, if possible, the trial of the submarine. "Her cousin is on board—trapped at the bottom of the sea!" murmured Tom. "This is awful!"

The wireless operator, answering Tom's question, said:

"I listened to a lot I didn't put down. It seems that the sub was on the surface, after having run awash for a satisfactory trial spin. Wireless messages and telephone talk have been going on between the sub and other government vessels all morning while we've been getting ready here to raise our wreck.

Anyhow, after the surface test, the order was suddenly given to make a crash dive."

"And something went wrong?" asked Tom.

"Must have. After I caught the order for the crash dive there was a wait, then a lot of signals came through and I knew what had happened. I used to be on a sub myself."

"Well, what happened?" Tom almost shouted the words.

"Either the cover jammed and the main hatch couldn't be closed, or else the sub dived before the officer in charge of the hatch had given the word to clamp the lid down. The next thing I heard was a signal from the sub herself, down on the bottom. They were asking for help, and in a hurry."

Tom understood how this message must have been sent. The sub was equipped with under-water wireless as well as with a marine telephone, the very system in which he had helped to correct the defect. So messages could be sent from the S.V.J. 13 when she was on the bottom as well as when she was on the surface.

"Tell us all you heard," urged Tom.

"Well, there isn't much more. The operator on the sub kept begging that help might come as soon as possible. He said the water-tight doors had been closed as soon as it was discovered that the dive had been made with one of the main hatches open. Though part of the sub may be filled with water there is a part where the men are still alive."

"Why can't they close the hatch, even if submerged?" asked Ned. "They ought to be able to force out what water rushed in and then they might come to the surface."

"They tried that, so I gather from the messages I heard over my wireless," said the Barge A operator. "The hatch is closed, and they're shooting out the water by compressed air. But something has gone wrong with the machinery and they can't get up under their own power. That's why the commanding officer of the fleet that's gathered to watch the test has sent out an S.O.S. for the wrecking crews."

"Where do they have to come from?" asked Tom.

"New York. And," went on the operator, "they'll be about four days making that voyage. Those big wrecking barges and derricks, like ours here, are clumsy and hard to tow. That's what makes it so awful," and the man seemed to recall days when he, too, had been trapped similarly on some submarine. "They'll never get 'em up alive," he concluded in a low voice. "I thought I'd better tell you, Mr. Swift."

“Yes, I’m glad you did. This is fierce,” Tom murmured. “This hits me pretty nearly at home,” he said to Harburg and some of his men. “My wife’s cousin is on that submarine—Lieutenant Nestor.”

“Tough luck,” commented the salvager. “I’m sorry. But those fellows know the risks and chances they take when they go down in those iron fish. They get extra pay for it, so I suppose they’re satisfied.”

“Satisfied!” exclaimed Tom, somewhat angered by the man’s callousness. “Would you be satisfied to be trapped at the bottom of the sea?”

“Oh, I didn’t mean that exactly,” and Harburg seemed a bit uneasy. “I just meant that a lot of men enjoy the thrill of submarine work and they’re very glad to get the extra pay. Of course, it’s no fun to be caught like that. But they should be more careful.”

“Yes, I suppose something went wrong—somebody may have blundered,” Tom admitted, hoping in his heart that it had not been Mary’s cousin. “But that doesn’t help the poor crew.”

“No, and I don’t see that we can help them,” went on Harburg. “They have sent for their own wrecking equipment.”

“It will be four days getting here,” Tom said. “By that time they may all be dead—down there!”

He looked across the water to where, dimly seen, was the fleet of United States war vessels gathered to watch the test of the new, big submarine. There seemed to be unusual activity among the surface craft assembled about that part of the ocean which might prove to be the grave of the S.V.J. 13.

“Well, it’s too bad, of course,” went on Harburg. “But I don’t see that it concerns us. Now, if you’ll give the word, Mr. Swift, we’ll go ahead with the raising of this wreck you have the magnets on. We must take advantage of the good weather. Hoist away!”

There was a sudden desire in the heart of Tom Swift to jump down from his perch near the controlling switches and heartily smite this man. His callousness angered the inventor. Then suddenly there came into his mind a most daring plan. He had stretched out his hand to start the more powerful current of electricity into the magnets, already fast to the wreck. Soon would follow the turning of the hoisting derrick windlasses.

Again Tom was stopped by the appearance of the wireless man who had gone back to his quarters. He came running along the barge deck crying:

“A message for you, Mr. Swift.”

“For me?”

“Yes, from Commander Ellison. He wants to know if you will try to raise

the submarine. Pull her up with your giant magnets."

"Why—how—why—he doesn't know me!" faltered Tom, startled by the coincidence of his own daring thought of a moment ago and the message that had just been received. "I don't know Commander Ellison. How does he know I am here?"

"Here's the message in full," went on the operator, as he read it off the paper on which he had inscribed it. " 'To Tom Swift—off Turtle Bay. Lieutenant Nestor—trapped in S.V.J. 13—advises you are in neighborhood with powerful magnetic wrecking equipment—I have no personal knowledge of this but Nestor insistent you can save the lives of his crew with magnets—seems impossible but we must try everything—our own wrecking apparatus cannot arrive for several days. Haste imperative—wireless if you get this and will help. Signed Ellison, Commander in charge.' "

The Barge A operator handed Tom the paper, for Tom, as the last words had been read to him, had leaped from his switch platform to the deck.

"What are you going to do?" cried Harburg.

"I'm going to answer this appeal for help!" declared Tom Swift.

"You mean you are going there yourself?"

"Not only am I going there myself, but I am going to take this outfit with me and do my best, with my giant magnets, to raise the S.V.J. 13. Cut off your current—haul up your magnet!" Tom called to the men on Barge B. "Clifton, you raise this magnet," he said to his chief helper on Barge A. "We're going to move. Signal the tugs to take both barges in tow at once!"

"But look here—see here!" spluttered Harburg. "This is *my* outfit! I had it brought here to raise this wreck I have located. You can't take it away just as we have made contact with the wreck. I won't permit it!"

"You mean you won't help save the S.V.J. 13?" asked Tom menacingly.

"No! Let the Government do its own work. They won't pay us for this salvage work. It's their own fault. They should have had wreckers on hand for the test. I won't permit it!"

"Whether you do or not," said Tom calmly, "we're going to the rescue. Haul up the magnets!"

"I won't permit it!" yelled Harburg, making a rush at Tom.

Before he could reach him, however, there was a patter of big feet carrying forward a big body. A second later Koku had folded the salvager in his powerful embrace, lifted him from the deck and muttered:

"Um come with Koku. Koku take um down stairs!"

The giant disappeared below deck with his struggling prisoner.

CHAPTER XXIII

TO THE RESCUE

For just a moment after the dramatic removal of Harburg, it seemed possible that some of his employees might revolt, resenting this rather high-handed procedure on the part of Tom Swift. Or, if not his actual act, at least one that was countenanced by him.

When Koku had taken Harburg off in his characteristic way, Tom was seen to smile for a moment, and he murmured:

"Good! That solves one problem."

Tom must have guessed what was in the minds of Harburg's men for in a moment he made an appeal to them, calling out:

"Are you all with me to volunteer to save the submarine?"

There was scarcely a moment's hesitation before the men shouted in unison:

"We are!"

As for his own men, Tom knew he need not put the question to them.

"We may not be able to raise the sub," he went on, "but we can't ignore this appeal for help. There is a possibility that we may be able to haul the craft to the surface in time to save the men."

"Shall I wireless Commander Ellison that you will come?" asked "Sparks," the wireless man.

"Tell him," cried Tom, "that we'll be there as soon as we can. Up anchors!" he ordered, and aboard both barges and tugs the men sprang into feverish activity.

Though the men of the giant magnet outfits worked rapidly, spurred on by Tom and Ned Newton, it was some little time before both tugs had their hawsers made fast to the respective barges and had begun the work of towing the unwieldy craft to the location of the sunken submarine. The distance was only a few miles, but every moment counted, as Tom Swift well knew.

He could picture the men in their craft, the S.V.J. 13, perhaps lying tilted into a mud bank, probably held fast in some rocky formation on the sea

bottom. He could almost tell what they were doing. Discipline under the iron rule of Navy regulations would be maintained, of course. Under the direction of their officers the men would probably be using every means to raise the boat by its own power. There was some doubt, however, if this could be done, judging by the tenor of the wireless and marine telephone messages.

"There should be some way of emergency escapes," argued Ned as he stood with Tom at the "bow" of their barge, looking toward the distant fleet gathered around what might be the watery grave of the stricken vessel.

"I understood this sub had the last word in such things," Tom said.

"Do you think we can get 'em up?"

"I don't know," and Tom's face and voice were grave. "It's a big order, but then I haven't yet used half the power of my magnets. I built them with a big margin of strength, but I guess we'll need all of it, and maybe more, too, to raise the S.V.J. 13."

"There's one thing in your favor," said Ned.

"What's that?"

"Every bit of that craft is of metal—I mean, all the outside. It ought to be comparatively easy to make magnetic contact with her."

"Yes, that part will be easy enough. The hard part will be, after both magnets are fast, so to speak, to pull the sub up. It's going to be a great strain on the barges and derricks as well as on the magnets."

"If anybody can do it I think you can," spoke Ned. "It isn't because I'm a friend of yours that I say this," he went on sincerely.

"Thanks," murmured Tom. "I hope we can save them. Mary will be all broken up if I don't rescue her cousin, to say nothing of the other poor chaps trapped below hundreds of feet of water."

As fast as they could, under forced draft, and with every ounce of available steam, the tugs were hauling the barges, with their towering derricks and giant magnets, toward the location of the disaster. As Tom and Ned in their nervous anxiety walked up and down the deck of their barge, they could hear the crackle of the wireless in the little cabin.

"Wonder what he's sending out now?" murmured Ned.

"Probably the commander is asking us to hurry and 'Sparks' is telling him we're hurrying all we can," Tom answered.

He resumed his station forward, peering through binoculars to observe anything that might indicate to him what the surface vessels were doing at the scene. There seemed to be something going on, for Tom saw several of the smaller craft shooting to and fro over the calm sea. He was glad the sea was

calm. It would make his work easier.

The magnetic outfit had been progressing toward the sunken submarine perhaps an hour, cutting down the distance about one half, when Tom was surprised to observe that the tug towing Barge A had come to a stop.

"I wonder what's wrong?" he murmured.

"Why?" asked Ned.

"They've shut down," Tom said. "There goes the other tug," he went on as he noted that exhaust steam no longer came from her pipe. "There's something wrong here!" exclaimed the inventor.

He looked toward the wireless cabin to see Harburg coming from it. There was nothing surprising in this. Though Koku had carried the struggling salvager below, Tom had not given his giant any orders to hold the man there. He still had the freedom of the barge. There was something in the smile and look on the face of Harburg that made Tom spring forward impulsively.

"What have you been doing?" he asked Harburg.

"No more than I have a right to do," was the answer. "These are my barges and my tugs. For that matter, these are my magnets. I've bought and paid for them. I can do as I please with them."

"What have you done?" demanded Tom.

"I've wirelessed to both tug captains to stop towing us to the submarine," was the answer. "I've told them to turn around and take us back to my wreck that I'm going to raise."

"Oh, so that's the reason why the tugs have stopped?" asked Tom, and his voice was ominously calm.

"That's the reason!" sneered Harburg. "I'll show you who's boss around here, Tom Swift!"

"Oh, will you? Well, that's a game two can play!"

Tom went to the wireless cabin. "Sparks" was inside with the head 'phones over his ears. Tom pulled them off.

"What's the idea?" demanded Rothven, the wireless operator.

"Have you been sending messages to the tugs to turn around?" asked Tom.

"Yes, I have," was the answer, sullenly given. "He told me to."

"Who did?"

"Mr. Harburg, the man I work for. Look here, Mr. Swift," and "Sparks" seemed to feel the position he was in. "I'm hired by Mr. Harburg and he said he'd fire me if I didn't do as he said. After all, these are his boats and he can give orders. I didn't want to leave those poor fellows to die in that submarine,

but what else could I do?"

"You could have refused to send those messages and have called me, if you had any back-bone!" cried Tom Swift. "As it is, I'm going to supply it for you. Get away from that key!"

"What are you going to do, Mr. Swift?"

"I'm going to countermand the orders you gave on behalf of Harburg."

"It won't do you any good!" said Rothven in a low voice. "Harburg made me send a message to the effect that no other orders but those he gave in code were to be heeded."

"Did he?" asked Tom, stumped for a moment.

"He sure did."

Then Tom had an inspiration.

"Get away from that key!" he ordered.

"Stay where you are!" snarled Harburg, sticking his head in the cabin. "If you interfere with me any more, Tom Swift, I'll have my men lock you below. I'm going to raise my own wreck. Let the Government attend to its own business. I mean what I say!"

"So do I!" cried Tom, with a look past Harburg's head. "Koku," he suddenly called, "take *both* these *gentlemen* below and *keep them there until I tell you to let them up*!"

"Sure, Master! Koku take um!"

Before Harburg could make a move he was tucked under Koku's left arm. Then, reaching his right hand into the cabin, the giant plucked the wireless operator out, gathered him under the other arm and marched across the deck to the hatchway leading below.

"Let me go! I'll have you arrested for this!" snarled Harburg.

"Koku arrest!" said the giant, as he thumped his way below the deck with his yelling, struggling prisoners. Several of Harburg's men seemed about to rush Tom, but he said:

"I'm in sole command now. I order you men to stand by to rescue those on that submarine."

"By whose orders?" asked one.

"By the orders of the United States Government!" snapped Tom.

"There's no United States Government here," sneered a Harburg man.

"There will be in a few minutes," said Tom grimly. He began tapping the wireless key. Blue sparks shot out and crackling through space went this message to Commander Ellison:

“Harburg, owner of tugs and barges, has stopped rescue. I have told men to continue on. Would appreciate some help! Signed Tom Swift.”

With Ned standing beside him in the wireless room, Tom waited a few minutes after sending this appeal. He was an expert wireless operator. Outside the cabin were gathered a knot of men—Harburg’s crew—who were anything but friendly just now, though be it said to their credit that they greatly resented their employer’s attitude.

Suddenly there came signals—crackling signals that snapped in the receivers of the head ’phones. Tom Swift listened. The message came and he called it off in triumph to the men.

“Commander Ellison coming to take charge of situation. Your outfit has been commandeered by United States Navy. Any man refusing to obey your orders will be shot as a mutineer!”

“Well, that’s that!” said Tom as he jotted down the message, having repeated it aloud as it came through the air.

“How do we know that’s straight?” asked one fellow.

“It’s straight, all right,” a companion told him. “I used to tap a key myself. I’m glad,” he went on, “that the boss has been beaten at his own game.”

“Sure!” chorused several.

“Then on to the rescue!” cried Tom.

The distant tugs would move only on code orders from Harburg. How could Tom give them? He looked toward the scene of the accident. There was a black cloud of smoke, approaching ever nearer the barges.

“Looks like a torpedo boat destroyer coming full speed,” observed Ned.

“It is,” Tom agreed. “Now I guess everything will be all right.”

“We’re with you, Mr. Swift. Don’t forget that!” said the man who had verified the wireless message. “No matter what Harburg says or does.”

From below could be heard the protests of the salvager and the booming voice of Koku, saying:

“Take um easy now else I sit on um’s head!”

The pall of smoke from the racing destroyer was coming nearer and nearer.

CHAPTER XXIV

WORKING AGAINST TIME

With funnels still belching smoke, and her safety valves popping, the destroyer drew alongside Barge A. From the bridge an elderly officer of the Navy called across the little stretch of open water:

"Is Mr. Swift aboard?"

"Here, Sir." Tom answered, waving his hand.

"Mr. Swift," went on the officer, "I am Commander Ellison. My compliments. I am exceedingly obliged to you for your prompt response to my appeal for help in this terrible emergency. I understand you are having some trouble."

"Something like mutiny, yes, Commander."

"I'll soon put that down!" he growled with the manner and voice of an old sea dog. "Lower a boat!" he ordered.

"Ready, Sir!" said the destroyer's captain. "Stand by to pipe Commander Ellison over the side!" he called. Amid the shrill notes of the bo'sun's pipe a detachment of marines stood at attention as the officer went down the ladder and got into the waiting launch, followed by several of the "leathernecks."

"I am pleased to meet you, Mr. Swift," greeted the commander as he came on board the barge. "I have heard of you. Lieutenant Nestor, who is among those unfortunately trapped in the submarine, suggested that you could help us."

"I started to," Tom said, "but the man to whom I sold my giant magnets seems to think his own business comes first."

"Ahead of Uncle Sam's!" exclaimed the commander. "I should like to see this *gentleman*," and his voice was bitterly sarcastic.

"Koku, bring them up!" called Tom down the hatchway.

The giant came stalking on deck, Harburg under one arm and the wireless operator under the other. If Commander Ellison felt any surprise at the strange sight he did not show it. He gave one look at Harburg and coldly said:

"You are aware of the situation we have to meet. I am aware of the

situation here," for Tom had hurriedly detailed it. "I will give you just one minute to order the code message sent, telling the tug commanders to start towing these barges, or I will have you lined up, after a proper court martial, and shot! One minute!"

He took out his watch. Harburg paled. The wireless operator cried out:

"I'll do it myself. Don't wait for him, Sir!"

"I guess we won't have to wait!" said Commander Ellison grimly, for at that moment Harburg nodded an assent and mumbled:

"I didn't mean anything. I thought the Navy had its own wrecking equipment and I'm a ruined man unless I raise the wreck I have located. I've spent a lot of money—I must get it back!"

"What is money to the lives of many men?" exclaimed the commander. "Send those orders!"

A few minutes later, following the crackle of the wireless, the two tugs again started towing the barges toward the sunken craft.

"I'll send two of our best tugs and a cruiser to stand by you, Mr. Swift, until you reach your position," said the Commander as he went back to the destroyer. "But I think you'll have no more trouble with these men."

"I think not myself," said Tom with a more cheerful expression on his bronzed face than it had worn for some time.

The visit of the Navy vessel seemed to have a good effect not only on those of Harburg's men inclined to be mutinous, but also on the others of the crew, including Tom's own helpers. The very tugs seemed to go faster.

Perhaps this was due to the presence of two other big tugs and a menacing cruiser which were soon acting as convoys to the magnetic rescuing craft. Should, for any reason, the Harburg tugs fail, the Navy ones could tow the barges to the scene of the accident.

The mutiny, if such it could be called, had been nipped early. In reality it was only a one-man revolt, the act of Harburg who by reason of being their employer could command his men to do as he desired.

Now that they were on their way to the rescue again, Tom Swift could let down a bit from the tension under which he had been laboring. With Ned he stood on the forward deck of Barge A, watching the waves break against the blunt bow as the tug pulled the craft onward. The other barge and tug were not far away, and on either side were the two Navy tugs while cruising around them in big circles, because of her greater speed, was the war vessel acting as a sort of police escort.

"Where are you going?" Ned asked his friend as he saw Tom start below.

“I’m going to see how Koku is making out with the two prisoners,” Tom answered. The giant had taken them below after the Commander had left.

Koku was found faithfully on guard. The wireless man sat dejectedly in one corner and Harburg was pacing the floor restlessly.

“Look here, Mr. Swift,” began the salvager as Tom entered. “I want——”

“I don’t want to hear anything out of you!” snapped Tom. “I’ve heard enough! If you’re going to start any argument, I’ll signal the cruiser and have you taken aboard as a prisoner.”

“Wait a minute,” begged Harburg. “You don’t give me a chance. I want to apologize, Mr. Swift, for what I did and said. I know I acted like a fool and I regret, more than I can tell you, that I lost my temper. You don’t know what it means to me to raise that wreck to which we had the magnets fast. If I don’t raise her and get the treasure, to which I have a right, as it has been abandoned by the owners, I stand to lose a big sum. I’ve put about all my fortune into this equipment, including your magnets, and it just made me wild to see the project abandoned.”

“It isn’t abandoned, it’s only postponed,” said Tom, willing to accept the man’s apology, but at the same time not feeling very friendly toward him. He could, however, appreciate his state of mind. “As soon as I raise the submarine, or make an attempt,” Tom went on, “I’ll go back and pull up your wreck, if I can.”

“That’s fair enough,” Harburg agreed. “I’m sorry for what I did, and I’d like to tell Commander Ellison so.”

“I’ll ask him to give you a chance,” Tom promised. “But it was a strange thing for you to do—turn back when men’s lives are in danger.”

“I realize that, but I had my own interests to look after. I thought the Navy could get up the submarine. I know if I make a claim for damages for the loss of my wreck, because of taking time off the salvaging operations to go to the rescue, it will be years before I will be reimbursed, if ever. I’ve had experience in trying to collect from the Government.”

“I must say they are sometimes very slow to pay, especially where an act of Congress is needed,” Tom agreed. “I’ve had the same trouble myself. But when there are lives to be saved, everything else goes out of the picture.”

“I suppose so,” said Harburg. “I should have thought of that before I acted so rashly and foolishly. I hope you’ll forgive me.”

“I can’t say anything against a plea of that sort,” said Tom, holding out his hand. “What the commander will do I don’t know. But I’m willing to let it pass.”

“I’ll do all I can to help raise the submarine!” promised Harburg eagerly. “I’ll tell my men to do the same.”

“I don’t believe you’ll have to tell them that,” Tom said. “They are on their toes now and rarin’ to go. Everything is all right.”

“Well, I’m glad of that. May I send a message to Captains Marsden and Blaker?” he asked humbly. “A straight wireless message,” he quickly added. “I just want to tell them to spare nothing of effort to bring up the submarine.”

“I’ll see that the messages are sent,” Tom promised.

A little later they went crackling out to the towing tugs. These vessels, however, were doing their best under the Naval orders and the barges with their derricks and giant magnets were making as good speed as possible to where the S.V.J. 13 rested on the bottom of the sea, the trapped men inside her steel shell hoping against hope that the rescue would not come too late.

It was the middle of the afternoon when Barge A reached the scene of the accident. A cordon of tugs and other Naval vessels in a circle about a watery space told more than could words where the submarine had gone down.

There was an exchange of wireless talk between Barge A and the flagship of Commander Ellison, “Sparks” taking the messages down on paper as they came to him, and sending Tom’s replies. The tenor of the latter was that the inventor was ready to proceed with the rescue.

“Commander Ellison wishes to know,” read one message to Tom, “if he may come aboard your barge and watch operations.”

“My compliments to him,” Tom answered, “and say he will be very welcome.”

A little later, while the two barges were being towed into position, one at the bow and the other at the stern of the sunken submarine, the commander’s launch steamed up beside Tom Swift’s big craft.

“I hope you will be successful, Tom Swift,” said the commander, obviously affected by the disaster. “Those buoys,” and he indicated two, “are at the bow and stern as nearly as we can locate them. They may guide you in lowering your magnets. But you will excuse me if I ask you some questions. The use of magnets in raising wrecks is new to me. We have always used chain cables under the bow and stern. The use of derricks and lifting cranes, once the sunken vessel is in the slings, is naturally the next obvious step. Will your magnets be strong enough?”

“I hope so,” Tom answered. “They have proved so in tests and I have not used half their power. The magnets, once they are in contact, will save a lot of time, I think.”

“I agree with you,” said the commander. “It is a tedious operation to have divers place the chain cables as slings. We haven’t a diver or diving apparatus here, though I have told them to be rushed here as fast as possible. We had no idea an accident like this would happen. It is lucky you were on hand, Mr. Swift.”

“I’m glad I happened to be here,” Tom responded. “It was just chance that the old wreck we were after is on the bottom near where your submarine went down. Just chance.”

“Well, chance plays a big part in our lives,” said the commander. “But don’t let me hinder you.”

“I’m going right ahead,” Tom said, as indeed, he was, having issued several orders between answering the commander’s questions as to the operation of his magnets and explaining the new principle on which they worked. “I have a sort of personal interest in raising the S.V.J. 13,” Tom concluded.

“So I understand—some relative is aboard.”

“My wife’s cousin. Are you ready over there?” Tom called to Barge B.

“All set, Mr. Swift,” came the answer.

“Then lower your magnet. I’m letting mine down!”

Tom was again on the switch platform of his barge. The dynamos and motors were whining and throbbing as if eager to get at their work.

Now began a desperate fight for life against time.

CHAPTER XXV

THE S.V.J. 13

Through the submarine wireless a last message had come from the S.V.J. 13 lying helpless on the bottom of the sea.

"All safe so far. Water all pumped out but we cannot come up under our own power. Disabled. Please hurry rescue. Enough air to last——"

Then the radio had gone silent, and all efforts to communicate with the sunken craft had been fruitless. No answers had come to the urgent calls from the surface ships to show how much longer the men could hold out. If only the message had been completed there might not have been the need for such frantic haste. As it was, not knowing whether the air would last one hour or ten, speed was vital.

"Under ordinary circumstances," Commander Ellison had told Tom, "there should have been enough air for a forced stay of at least several days. Since we don't know what the conditions are—well, I leave it to you to guess, Mr. Swift."

"I'm not going to take the time to guess, Sir," Tom had replied.

He did not add that he dared not guess what might happen unless the S.V.J. 13 could be raised to the surface to renew the oxygen supply. He could picture, however, the awful scenes that would take place in the submarine, with men growing weaker and weaker from lack of the life-giving air. Clearly there must have been some serious mishap in the craft or they would have used the new emergency escape apparatus.

Under Tom's direction, every possible thing was being done to save the trapped men. Deep into the sea, which fortunately remained calm, the giant magnets were lowered at the ends of their strong cables. The marking of the probable location of the stern and bow of the submarine by the buoys the Naval vessels had planted soon after the disastrous dive, saved considerable valuable time for Tom and his men.

With one hand on the guide wire, by means of which he could tell when his magnet was in contact with the steel hull, Tom Swift was on the alert to give the next signal. Luck, or good judgment, was with him, for after one or two

preliminary trials the inventor caught the tell-tale tremor and knew his magnet was in the right place.

"How are you coming on?" he called to the other barge crew. "I'm fast with my magnet."

"We seem to have slipped off!" reported Jensen, who was handling the guide wire on Barge B. "We're going to try again."

"As fast as you can!" Tom urged. "It may be a question of minutes!"

"We're working as hard as we can, Sir," came floating across the stretch of water between the two craft.

Tom could do nothing until both magnets were fast. If he started to pull up his end of the submarine, the bow, there might be disastrous results. He must wait—and waiting was terribly hard.

In a few minutes, however, after the other giant magnet had been raised and lowered several times, there came the welcome shout:

"We're fast!"

"Good!" Tom exclaimed. "Turn on all your juice!"

At the same time he swung over the rheostat switch which allowed the full current to flow gradually into his magnet. This would insure the maximum holding power of the big disk, and when the crew on the other barge did likewise, then would come the final test—the raising of the S.V.J. 13.

The dynamos were humming shrilly now as the throbbing gasoline engines turned the whirring coils about, speeding faster and faster. Tom looked at his ammeter. It indicated nearly the limit of power. Never before had he used this much force. That, and more, might be necessary to hoist the great weight of the submarine.

"How are you coming on?" Tom called to Jensen.

"Fast and tight!" was the answer. "We're ready to hoist!"

"Then hoist!" Tom shouted.

He now turned the power into the derrick windlass, and a look across the water at the other barge told him the crew there had done the same. The great lifting cables tauted. The pulley blocks creaked and groaned as if in protest. Would they hold under this terrific strain?

That was one of the questions, among others, that flashed through the mind of Tom Swift. But he never faltered. It was now or never. Make or break. Do or die.

The barges, broad-beamed as they were, tilted as the strain came on derricks, cables and magnets. There were three factors to be considered. Would

the magnets hold? Would the cables stand the strain? Would the derricks hold out?

More and more electrical power was turned into the motors winding the coils of wire cables about the drums. Eager eyes strained for what they hoped to see—the shining black hull of the submarine, breaking the surface as a whale might do.

The barges were now tilting at a dangerous angle, but Tom knew that before they could capsize, either something would break or he would lift the submarine. Foot by foot the lifting cables came aboard on the slowly turning drums of the derricks. It was the moment of greatest strain. A shout came from Barge B.

"What is it?" cried Tom, his hands on the switches.

"We've started up on our end!" Jensen reported.

A second later Tom knew that his end, also, was freed from the grip of the bottom of the sea.

"I'm up!" yelled the inventor. "Hoist away! Fast, now!"

The S.V.J. 13 had started on her upward journey. Would it be possible to completely raise her? After she had broken through the surface of the sea, would the men inside be found alive?

These questions no one could answer.

The giant magnets held. The cables stood the terrific strain, the derricks held up and the barges did not capsize.

Once the craft was free from the grip of the bottom silt and mud, the strain was less. Rapidly now the lifting cables were hauled in. Tom gave his magnet the last bit of power possible, and called to Jensen to do the same. Then he speeded up the lifting motor and called to the crew of the other barge to do the same.

The water between the two barges seethed and bubbled. A little film of oil could be seen, indicating that somewhere there was a leak in the submarine. Then suddenly there arose shouts from hundreds of eager watchers:

"There she is!"

Through the surface a rounded, black shape broke. The turrets showed, then the superstructure, then finally the whole length of the sunken craft.

Tom Swift and his giant magnets had raised the S.V.J. 13!

A cheer came from the sailors and marines of the surrounding craft. There was a husky note in Commander Ellison's voice as, saluting Tom, the officer said:

“Thank God, Mr. Swift! You’ve done it!”

“We’re not out of the woods yet,” came the answer.

They were a moment later, when the submarine was raised to her normal floating position, though she could not have floated had the lifting cables or magnets released their grip.

Then, while the cheering throngs looked on, the forward hatch was opened and man after man of the crew came out on the wet, glistening deck. Last of all, to emerge, of course, was Captain Blake. Just before him Lieutenant Nestor had climbed out.

“I knew you could do it, Tom Swift!” the lieutenant called. “We were all banking on you and your magnets!”

“Never mind the compliments!” said Tom with a grim chuckle. “Get aboard the barges as fast as you can! There’s no telling how long I can hold you up!”

Quick orders were given and the men were soon taken off in small boats that had been held in readiness, and lined up on Barges A and B. While Tom’s magnets still held the stricken submarine on the surface, great chain cables were slipped under her, fore and aft, and made fast to barges and Navy tugs, to augment the holding power of the derricks and magnets.

While the S.V.J. 13 was thus protected against again going to the bottom disabled, her crew prepared to make emergency repairs that would insure her safety floating under her own power.

“Are you all out?” Tom asked Lieutenant Nestor when the last chain cable had been made fast.

“Every man, thanks to you,” was the answer as the two clasped hands.

“How much longer could you have held out?” Tom asked. “We didn’t get all of that message about the air.”

“I know,” said the lieutenant in a low voice. “Our sending radio gave out though we could hear you. Well, we had air for just one hour more, and that hour is up——now,” was the answer, as Lieutenant Nestor looked at his watch. “It was a close call!”

“Yes,” Tom agreed, “it was. I’ll send a wireless to Mary telling her you are safe.”

There was great rejoicing in the Swift home when this message was received.

What had happened aboard the S.V.J. 13 to make her take the unexpected dive that was so nearly fatal was never made public. Whether the new machinery failed or whether someone blundered was a Navy secret, faithfully

kept after the investigation. The craft was not seriously damaged and was tested again, in two weeks time, coming through successfully and being accepted. Tom Swift was officially thanked by the United States Navy for what he had done.

"Well," remarked the inventor to Ned and Harburg, a few days after the raising of the submarine, when Navy barges had arrived to take the places of the A. and B., thus releasing them and the giant magnets, "I suppose we can get back to our other work now."

"If you don't mind, I should like to try to raise my wreck," said the salvager, with no trace of his former arrogant manner. "I hope it isn't too late."

"The weather seems to be holding good," Tom remarked. "I'll do my best to help you."

"I'll be glad of that."

The detailed story of the raising of the old wreck of the *Sea Horse* has no place in this volume. Suffice it to say that after several unsuccessful attempts she was brought to the surface by Tom's giant magnets, and though the wealth aboard was not all that rumor had made it, there was enough to reward Harburg handsomely for his investment. He gave Tom a percentage, as he had promised, and ordered more magnets for work in other waters so that, all told, the Swift concern profited well by Tom's invention. The iron junk magnets also worked well, and many were sold.

Following the raising of the treasure trove, Tom and Ned returned home with their workmen. About a month after the raised and repaired S.V.J. 13 had been accepted by the Navy, Lieutenant Nestor called to see Mary and Tom.

"What did you think," asked Mary of her cousin, "when you were trapped on the sea bottom?"

"To tell you the truth," he answered, "I was so busy trying various means of escape, not one of which was possible, that I did not have time to think of our danger."

"You must have worried when you found the air failing."

"I suppose we all did. But then, you see, I had faith in Tom's magnets. Once we had word that he was coming to the rescue we sort of sat back and waited for him to pull us out. It was all we could do, anyhow," the officer said with a grim chuckle.

When newspaper reporters, interviewing Tom Swift on how he had accomplished the work, asked him what invention he was going to turn out next, Tom replied:

"It's a secret I haven't told my wife or my business manager."

So naturally it cannot be revealed here. That Tom had something in mind need not be doubted, and a future book may disclose what it was.

THE END

TRANSCRIBER NOTES

Misspelled words and printer errors have been corrected. Where multiple spellings occur, majority use has been employed.

Punctuation has been maintained except where obvious printer errors occur.

[The end of *Tom Swift and his Giant Magnet* by Howard Roger Garis (as Victor Appleton)]