The Skylark of Space

E. E. Smith and Lee Hawkins Garby



E. E. Smith

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AI-created artistic interpretation.

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Edward Elmer Smith was an American writer of science fiction who also worked in food chemistry. The Skylark stories and the later Lensman series helped establish the tradition of space adventure on an interstellar scale. Lee Hawkins Garby collaborated on The Skylark of Space.

Smith trained in chemistry and made his professional living in the food industry. The interest in engineering that readers meet in his stories was therefore part of a working life spent considering what materials could actually do. He later wrote the Lensman books, which developed the scale of interstellar adventure still further.

The Skylark of Space appeared in Amazing Stories in 1928 with Garby credited as a collaborator. Her place in the authorship matters particularly in a field where a returning series name can come to stand for the work of several people. The first adventure moves from a discovery that can be discussed among a handful of acquaintances to questions of travel and power on a scale none of them initially imagines.

A reading edition

This edition follows the historical English text identified in the edition note. Original illustrations are retained where supplied with the source.

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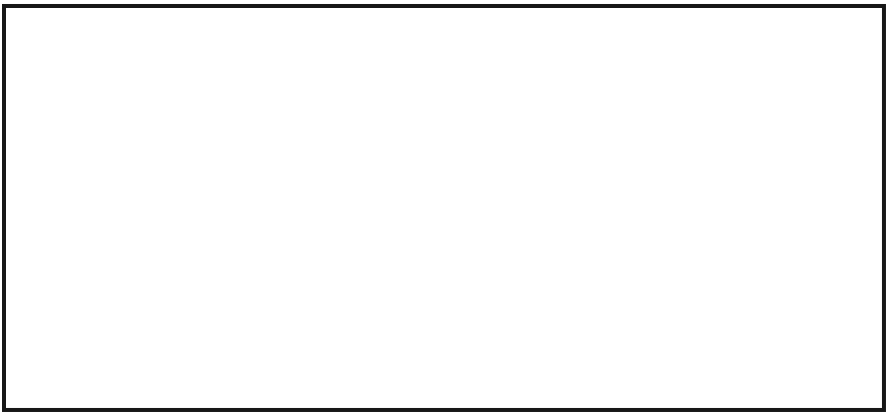

The SKYLARK *of* SPACE

By Edward Elmer Smith

In Collaboration with

LEE HAWKINS GARBY

Perhaps it is a bit unethical and unusual for editors to voice their opinion of their own wares, but when such a story as "The Skylark of Space" comes along, we just feel as if we must shout from the housetops that this is the greatest interplanetarian and space flying story that has appeared this year. Indeed, it probably will rank as one of the great space flying stories for many years to come. The story is chock full, not only of excellent science, but woven through it there is also that very rare element, love and romance. This element in an interplanetarian story is often apt to be foolish, but it does not seem so in

this particular story.

We know so little about intra-atomic forces, that this story, improbable as it will appear in spots, will read commonplace years hence, when we have atomic engines, and when we have solved the riddle of the atom.

You will follow the hair-raising explorations and strange ventures into far-away worlds with bated breath, and you will be fascinated, as we were, with the strangeness of it all.



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CHAPTER I

The Occurrence of the Impossible

Petrified with astonishment, Richard Seaton stared after the copper steam-bath upon which he had been electrolyzing his solution of "X," the unknown metal. For as soon as he had removed the beaker the heavy bath had jumped endwise from under his hand as though it were alive. It had flown with terrific speed over the table, smashing apparatus and bottles of chemicals on its way, and was even now disappearing through the open window. He seized his prism binoculars and focused them upon the flying vessel, a speck in the distance. Through the glass he saw that it did not fall to the ground, but continued on in a straight line, only its rapidly diminishing size showing the enormous velocity with which it was

moving. It grew smaller and smaller, and in a few moments disappeared utterly.

The chemist turned as though in a trance. How was this? The copper bath he had used for months was gone—gone like a shot, with nothing to make it go. Nothing, that is, except an electric cell and a few drops of the unknown solution. He looked at the empty space where it had stood, at the broken glass covering his laboratory table, and again stared out of the window.

He was aroused from his stunned inaction by the entrance of his colored laboratory helper, and silently motioned him to clean up the wreckage.

"What's happened, Doctah?" asked the dusky assistant.

"Search me, Dan. I wish I knew, myself," responded Seaton, absently, lost in wonder at the incredible phenomenon of which he had just been a witness.

Ferdinand Scott, a chemist employed in the next room, entered breezily.

"Hello, Dicky, thought I heard a racket in here," the newcomer remarked. Then he saw the helper busily mopping up the reeking mass of chemicals.

"Great balls of fire!" he exclaimed. "What've you been celebrating? Had an explosion? How, what, and why?"

"I can tell you the 'what,' and part of the 'how'," Seaton replied thoughtfully, "but as to the 'why,' I am completely in the dark. Here's all I know about it," and in a few words he related the foregoing incident. Scott's face showed in turn interest, amazement, and pitying alarm. He took Seaton by the arm.

"Dick, old top, I never knew you to drink or dope, but this stuff sure came out of either a bottle or a needle. Did you see a pink serpent carrying it away? Take my advice, old son, if you want to stay in Uncle Sam's service, and lay off the stuff, whatever it is. It's bad enough to come down here so far gone that you wreck most of your

apparatus and lose the rest of it, but to pull a yarn like that is going too far. The Chief will have to ask for your resignation, sure. Why don't you take a couple of days of your leave and straighten up?"

Seaton paid no attention to him, and Scott returned to his own laboratory, shaking his head sadly.

Seaton, with his mind in a whirl, walked slowly to his desk, picked up his blackened and battered briar pipe, and sat down to study out what he had done, or what could possibly have happened, to result in such an unbelievable infraction of all the laws of mechanics and gravitation. He knew that he was sober and sane, that the thing had actually happened. But why? And how? All his scientific training told him that it was impossible. It was unthinkable that an inert mass of metal should fly off into space without any applied force. Since it had actually happened, there must have been applied an enormous and hitherto unknown force. What was that force? The reason for this unbelievable manifestation of energy was certainly somewhere in the solution, the electrolytic cell, or the steam-bath. Concentrating all the power of his highly-trained analytical mind upon the problem—deaf and blind to everything else, as was his wont when deeply interested—he sat motionless, with his forgotten pipe clenched between his teeth. Hour after hour he sat there, while most of his fellow-chemists finished the day's work and left the building and the room slowly darkened with the coming of night.

Finally he jumped up. Crashing his hand down upon the desk, he exclaimed:

"I have liberated the intra-atomic energy of copper! Copper, 'X,' and electric current!

"I'm sure a fool for luck!" he continued as a new thought struck him. "Suppose it had been liberated all at once? Probably blown the whole world off its hinges. But it wasn't: it was given off slowly and in a straight line. Wonder why? Talk about power! Infinite! Believe me, I'll show this whole Bureau of Chemistry something to make their eyes stick out, tomorrow. If they won't let me go ahead and develop it, I'll resign, hunt up some more 'X', and do it myself. That bath is on its way to the moon right now, and there's no reason why

I can't follow it. Martin's such a fanatic on exploration, he'll fall all over himself to build us any kind of a craft we'll need ... we'll explore the whole solar system! Great Cat, what a chance! A fool for luck is right!"

He came to himself with a start. He switched on the lights and saw that it was ten o'clock. Simultaneously he recalled that he was to have had dinner with his fiancée at her home, their first dinner since their engagement. Cursing himself for an idiot he hastily left the building, and soon his motorcycle was tearing up Connecticut Avenue toward his sweetheart's home.

CHAPTER II

Steel Becomes Interested

Dr. Marc DuQuesne was in his laboratory, engaged in a research upon certain of the rare metals, particularly in regard to their electrochemical properties. He was a striking figure. Well over six feet tall, unusually broad-shouldered even for his height, he was plainly a man of enormous physical strength. His thick, slightly wavy hair was black. His eyes, only a trifle lighter in shade, were surmounted by heavy black eyebrows which grew together above his aquiline nose.

Scott strolled into the room, finding DuQuesne leaning over a delicate electrical instrument, his forbidding but handsome face strangely illuminated by the ghastly glare of his mercury-vapor arcs.

"Hello, Blackie," Scott began. "I thought it was Seaton in here at first. A fellow has to see your faces to tell you two apart. Speaking of Seaton, d'you think that he's quite right?"

"I should say, off-hand, that he was a little out of control last night and this morning," replied DuQuesne, manipulating connections with his long, muscular fingers. "I don't think that he's insane, and I

don't believe that he dopes—probably overwork and nervous strain. He'll be all right in a day or two."

"I think he's a plain nut, myself. That sure was a wild yarn he sprung on us, wasn't it? His imagination was hitting on all twelve, that's sure. He seems to believe it himself, though, in spite of making a flat failure of his demonstration to us this morning. He saved that waste solution he was working on—what was left of that carboy of platinum residues after he had recovered all the values, you know—and got them to put it up at auction this noon. He resigned from the Bureau, and he and M. Reynolds Crane, that millionaire friend of his, bid it in for ten cents."

"M. Reynolds Crane?" DuQuesne concealed a start of surprise. "Where does he come in on this?"

"Oh, they're always together in everything. They've been thicker than Damon and Pythias for a long time. They play tennis together—they're doubles champions of the District, you know—and all kinds of things. Wherever you find one of them you'll usually find the other. Anyway, after they got the solution Crane took Seaton in his car, and somebody said they went out to Crane's house. Probably trying to humor him. Well, ta-ta; I've got a week's work to do yet today."

As Scott left DuQuesne dropped his work and went to his desk, with a new expression, half of chagrin, half of admiration, on his face. Picking up his telephone, he called a number.

"Brookings?" he asked, cautiously. "This is DuQuesne. I must see you immediately. There's something big started that may as well belong to us.... No, can't say anything over the telephone.... Yes, I'll be right out."

He left the laboratory and soon was in the private office of the head of the Washington or "diplomatic" branch, as it was known in certain circles, of the great World Steel Corporation. Offices and laboratories were maintained in the city, ostensibly for research work, but in reality to be near the center of political activity.

"How do you do, Doctor DuQuesne?" Brookings said as he seated his visitor. "You seem excited."

"Not excited, but in a hurry," DuQuesne replied. "The biggest thing in history has just broken, and we've got to work fast if we get in on it. Have you any doubts that I always know what I am talking about?"

"No," answered the other in surprise. "Not the slightest. You are widely known as an able man. In fact, you have helped this company several times in various deal—er, in various ways."

"Say it. Brookings. 'Deals' is the right word. This one is going to be the biggest ever. The beauty of it is that it should be easy—one simple burglary and an equally simple killing—and won't mean wholesale murder, as did that...."

"Oh, no, Doctor, not murder. Unavoidable accidents."

"Why not call things by their right names and save breath, as long as we're alone? I'm not squeamish. But to get down to business. You know Seaton, of our division, of course. He has been recovering the various rare metals from all the residues that have accumulated in the Bureau for years. After separating out all the known metals he had something left, and thought it was a new element, a metal. In one of his attempts to get it into the metallic state, a little of its solution fizzed out and over a copper steam bath or tank, which instantly flew out of the window like a bullet. It went clear out of sight, out of range of his binoculars, just that quick." He snapped his fingers under Brookings' nose. "Now that discovery means such power as the world never dreamed of. In fact, if Seaton hadn't had all the luck in the world right with him yesterday, he would have blown half of North America off the map. Chemists have known for years that all matter contains enormous stores of intra-atomic energy, but have always considered it 'bound'—that is, incapable of liberation. Seaton has liberated it."

"And that means?"

"That with the process worked out, the Corporation could furnish power to the entire world, at very little expense."

A look of scornful unbelief passed over Brookings' face.

"Sneer if you like," DuQuesne continued evenly. "Your ignorance doesn't change the fact in any particular. Do you know what intra-atomic energy is?"

"I'm afraid that I don't, exactly."

"Well, it's the force that exists between the ultimate component parts of matter, if you can understand that. A child ought to. Call in your chief chemist and ask him what would happen if somebody would liberate the intra-atomic energy of one hundred pounds of copper."

"Pardon me, Doctor. I didn't presume to doubt you. I will call him in."

He telephoned a request and soon a man in white appeared. In response to the question he thought for a moment, then smiled slowly.

"If it were done instantaneously it would probably blow the entire world into a vapor, and might force it clear out of its orbit. If it could be controlled it would furnish millions of horsepower for a long time. But it can't be done. The energy is bound. Its liberation is an impossibility, in the same class with perpetual motion. Is that all, Mr. Brookings?"

As the chemist left, Brookings turned again to his visitor, with an apologetic air.

"I don't know anything about these things myself, but Chambers, also an able man, says that it is impossible."

"As far as he knows, he is right. I should have said the same thing this morning. But I do know about these things—they're my

business—and I tell you that Seaton has done it."

"This is getting interesting. Did you see it done?"

"No. It was rumored around the Bureau last night that Seaton was going insane, that he had wrecked a lot of his apparatus and couldn't explain what had happened. This morning he called a lot of us into his laboratory, told us what I have just told you, and poured some of his solution on a copper wire. Nothing happened, and he acted as though he didn't know what to make of it. The foolish way he acted and the apparent impossibility of the whole thing, made everybody think him crazy. I thought so until I learned this afternoon that Mr. Reynolds Crane is backing him. Then I knew that he had told us just enough of the truth to let him get away clean with the solution."

"But suppose the man *is* crazy?" asked Brookings. "He probably is a monomaniac, really insane on that one thing, from studying it so much."

"Seaton? Yes, he's crazy—like a fox. You never heard of any insanity in Crane's family, though, did you? You know that he never invests a cent in anything more risky than Government bonds. You can bet your last dollar that Seaton showed him the real goods." Then, as a look of conviction appeared upon the other's face, he continued:

"Don't you understand that the solution was Government property, and he had to do something to make everybody think it worthless, so that he could get title to it? That faked demonstration that failed was certainly a bold stroke—so bold that it was foolhardy. But it worked. It fooled even me, and I am not usually asleep. The only reason he got away with it, is, that he has always been such an open-faced talker, always telling everything he knew.

"He certainly played the fox," he continued, with undisguised admiration. "Heretofore he has never kept any of his discoveries secret or tried to make any money out of them, though some of them were worth millions. He published them as soon as he found them, and somebody else got the money. Having that reputation, he

worked it to make us think him a nut. He certainly is clever. I take off my hat to him—he's a wonder!"

"And what is your idea? Where do we come in?"

"You come in by getting that solution away from Seaton and Crane, and furnishing the money to develop the stuff and to build, under my direction, such a power-plant as the world never saw before."

"Why get that particular solution? Couldn't we buy up some platinum wastes and refine them?"

"Not a chance," replied the scientist. "We have refined platinum residues for years, and never found anything like that before. It is my idea that the stuff, whatever it is, was present in some particular lot of platinum in considerable quantities as an impurity. Seaton hasn't all of it there is in the world, of course, but the chance of finding any more of it without knowing exactly what it is or how it reacts is extremely slight. Besides, we must have exclusive control. How could we make any money out of it if Crane operates a rival company and is satisfied with ten percent profit? No, we must get all of that solution. Seaton and Crane, or Seaton, at least, must be killed, for if he is left alive he can find more of the stuff and break our monopoly. I want to borrow your strong-arm squad tonight, to go and attend to it."

After a few moments' thought, his face set and expressionless, Brookings said:

"No, Doctor. I do not think that the Corporation would care to go into a matter of this kind. It is too flagrant a violation of law, and we can afford to buy it from Seaton after he proves its worth."

"Bah!" snorted DuQuesne. "Don't try that on me, Brookings. You think you can steal it yourself, and develop it without letting me in on it? You can't do it. Do you think I am fool enough to tell you all about it, with facts, figures, and names, if you could get away with it without me? Hardly! You can steal the solution, but that's all you

can do. Your chemist or the expert you hire will begin experimenting without Seaton's lucky start, which I have already mentioned, but about which I haven't gone into any detail. He will have no information whatever, and the first attempt to do anything with the stuff will blow him and all the country around him for miles into an impalpable powder. You will lose your chemist, your solution, and all hope of getting the process. There are only two men in the United States, or in the world, for that matter, with brains enough and information enough to work it out. One is Richard B. Seaton, the other is Marc C. DuQuesne. Seaton certainly won't handle it for you. Money can't buy him and Crane, and you know it. You must come to me. If you don't believe that now, you will very shortly, after you try it alone."

Brookings, caught in his duplicity and half-convinced of the truth of DuQuesne's statements, still temporized.

"You're modest, aren't you, Doctor?" he asked, smiling.

"Modest? No," said the other calmly. "Modesty never got anybody anything but praise, and I prefer something more substantial. However, I never exaggerate or make over-statements, as you should know. What I have said is merely a statement of fact. Also, let me remind you that I am in a hurry. The difficulty of getting hold of that solution is growing greater every minute, and my price is getting higher every second."

"What is your price at the present second?"

"Ten thousand dollars per month during the experimental work; five million dollars in cash upon the successful operation of the first power unit, which shall be of not less than ten thousand horsepower; and ten percent of the profits."

"Oh, come, Doctor, let's be reasonable. You can't mean any such figures as those."

"I never say anything I don't mean. I have done a lot of dirty work with you people before, and never got much of anything out of it. You were always too strong for me; that is, I couldn't force you

without exposing my own crookedness, but now I've got you right where I want you. That's my price; take it or leave it. If you don't take it now, the first two of those figures will be doubled when you do come to me. I won't go to anybody else, though others would be glad to get it on my terms, because I have a reputation to maintain and you are the only ones who know that I am crooked. I know that my reputation is safe as long as I work with you, because I know enough about you to send all you big fellows, clear down to Perkins, away for life. I also know that that knowledge will not shorten my days, as I am too valuable a man for you to kill, as you did...."

"Please, Doctor, don't use such language...."

"Why not?" interrupted DuQuesne, in his cold, level voice. "It's all true. What do a few lives amount to, as long as they're not yours and mine? As I said, I can trust you, more or less. You can trust me, because you know that I can't send you up without going with you. Therefore, I am going to let you go ahead without me as far as you can—it won't be far. Do you want me to come in now or later?"

"I'm afraid we can't do business on any such terms as that," said Brookings, shaking his head. "We can undoubtedly buy the power rights from Seaton for what you ask."

"You don't fool me for a second, Brookings. Go ahead and steal the solution, but take my advice and give your chemist only a little of it. A very little of that stuff will go a long way, and you will want to have some left when you have to call me in. Make him experiment with extremely small quantities. I would suggest that he work in the woods at least a hundred miles from his nearest neighbor, though it matters nothing to me how many people you kill. That's the only pointer I will give you—I'm giving it merely to keep you from blowing up the whole country," he concluded with a grim smile. "Good-bye."

As the door closed behind the cynical scientist, Brookings took a small gold instrument, very like a watch, from his pocket. He

touched a button and held the machine close to his lips.

"Perkins," he said softly, "M. Reynolds Crane has in his house a bottle of solution."

"Yes, sir. Can you describe it?"

"Not exactly. It is greenish yellow in color, and I gather that it is in a small bottle, as there isn't much of the stuff in the world. I don't know what it smells or tastes like, and I wouldn't advise experimenting with it, as it seems to be a violent explosive and is probably poisonous. Any bottle of solution of that color kept in a particularly safe place would probably be the one. Let me caution you that this is the biggest thing you have ever been in, and *it must not fail*. Any effort to purchase it would be useless, however large a figure were named. But if the bottle were only partly emptied and filled up with water, I don't believe anyone would notice the difference, at least for some time, do you?"

"Probably not, sir. Good-bye."

Next morning, shortly after the office opened, Perkins, whose principal characteristic was that of absolute noiselessness, glided smoothly into Brookings' office. Taking a small bottle about half full of a greenish-yellow liquid from his pocket, he furtively placed it under some papers upon his superior's desk.

"A man found this last night, sir, and thought it might belong to you. He said this was a little less than half of it, but that you could have the rest of it any time you want it."

"Thank you, Perkins, he was right. It is ours. Here's a letter which just came," handing him an envelope, which rustled as Perkins folded it into a small compass and thrust it into his vest pocket. "Good morning."

As Perkins slid out, Brookings spoke into his telephone, and soon Chambers, his chief chemist, appeared.

"Doctor Chambers," Brookings began, showing him the bottle, "I have here a solution which in some way is capable of liberating the

intra-atomic energy of matter, about which I asked you yesterday. It works on copper. I would like to have you work out the process for us, if you will."

"What about the man who discovered the process?" asked Chambers, as he touched the bottle gingerly.

"He is not available. Surely what one chemist can do, others can? You will not have to work alone. You can hire the biggest men in the line to help you—expense is no object."

"No, it wouldn't be, if such a process could be worked out. Let me see, whom can we get? Doctor Seaton is probably the best man in the country for such a research, but I don't think that we can get him. I tried to get him to work on the iridium-osmium problem, but he refused."

"We might make an offer big enough to get him."

"No. Don't mention it to him," with a significant look. "He's to know nothing about it."

"Well, then, how about DuQuesne, who was in here yesterday? He's probably next to Seaton."

"I took it up with him yesterday. We can't get him, his figures are entirely out of reason. Aren't there any other men in the country who know anything? You are a good man, why don't you tackle it yourself?"

"Because I don't know anything about that particular line of research, and I want to keep on living awhile longer," the chemist replied bluntly. "There are other good men whom I can get, however. Van Schravendyck, of our own laboratory, is nearly as good as either Seaton or DuQuesne. He has done a lot of work on radio-activity and that sort of thing, and I think he would like to work on it."

"All right. Please get it started without delay. Give him about a quarter of the solution and have the rest put in the vault. Be sure that his laboratory is set up far enough away from everything else to

avoid trouble in case of an explosion, and caution him not to work on too much copper at once. I gather that an ounce or so will be plenty."

The chemist went back to his laboratory and sought his first assistant.

"Van," he began, "Mr. Brookings has been listening to some lunatic who claims to have solved the mystery of liberating intra-atomic energy."

"That's old stuff," the assistant said, laughing. "That and perpetual motion are always with us. What did you tell him?"

"I didn't get a chance to tell him anything—he told me. Yesterday, you know, he asked me what would happen if it could be liberated, and I answered truthfully that lots of things would happen, and volunteered the information that it was impossible. Just now he called me in, gave me this bottle of solution, saying that it contained the answer to the puzzle, and wanted me to work it out. I told him that it was out of my line and that I was afraid of it—which I would be if I thought there was anything in it—but that it was more or less in your line, and he said to put you on it right away. He also said that expense was no object; to set up an independent laboratory a hundred miles off in the woods, to be safe in case of an explosion; and to caution you not to use too much copper at once—that an *ounce or so* would be plenty!"

"An ounce! Ten thousand tons of nitroglycerin! I'll say an ounce would be plenty, if the stuff is any good at all, which of course it isn't. Queer, isn't it, how the old man would fall for anything like that? How did he explain the failure of the discoverer to develop it himself?"

"He said the discoverer is not available," answered Chambers with a laugh. "I'll bet he isn't available—he's back in St. Elizabeth's again by this time, where he came from. I suggested that we get either Seaton

or DuQuesne of Rare Metals to help us on it, and he said that they had both refused to touch it, or words to that effect. If those two turned down a chance to work on a thing as big as this would be, there probably is nothing in this particular solution that is worth a rap. But what Brookings says goes, around here, so it's you for the woods. And don't take any chances, either—it is conceivable that something might happen."

"Sure it might, but it won't. We'll set up that lab near a good trout stream, and I'll have a large and juicy vacation. I'll work on the stuff a little, too—enough to make a good report, at least. I'll analyze it, find out what is in it, deposit it on some copper, shoot an electrolytic current through it, and make a lot of wise motions generally, and have a darn good time besides."

CHAPTER III

Seaton Solves the Problem of Power

"Well, Mart," said Seaton briskly, "now that the Seaton-Crane Company, Engineers, is organized to your satisfaction, let's hop to it. I suppose I'd better beat it downtown and hunt up a place to work?"

"Why not work here?"

"Your house? You don't want this kind of experimenting going on around here, do you? Suppose a chunk of the stuff gets away from me and tears the side out of the house?"

"This house is the logical place to work. I already have a complete machine shop and testing laboratory out in the hangar, and we can easily fit up a chemical laboratory for you up in the tower room. You can have open windows on four sides there, and if you should accidentally take out the wall there will be little damage done. We will be alone here, with the few neighbors so thoroughly accustomed to my mechanical experiments that they are no longer curious."

"Fine. There's another good thing, too. Your man Shiro. He's been with you in so many tight pinches in all the unknown corners of the world on your hunting trips and explorations that we can trust him, and he'll probably come in handy."

"Yes, we can trust him implicitly. As you know, he is really my friend instead of my man."

During the next few days, while workmen were installing a complete chemical laboratory in the tower room, Seaton busied himself in purchasing the equipment necessary for the peculiar problem before him. His list was long and varied, ranging from a mighty transformer, capable of delivering thousands of kilovolts down to a potentiometer, so sensitive that it would register the difference of potential set up by two men in shaking hands.

From daylight until dark Seaton worked in the laboratory, either alone or superintending and assisting the men at work there. Every night when Crane went to bed he saw Seaton in his room in a haze of smoke, poring over blueprints or, surrounded by abstruse works upon the calculus and sub-atomic phenomena, making interminable calculations.

Less than two miles away lived Dorothy Vaneman, who had promised to be his wife. He had seen her but once since "the impossible" had happened, since his prosaic copper steam-bath had taken flight under his hand and pointed the way to a great adventure. In a car his friend was to build, moved by this stupendous power which he must learn to control, they would traverse interstellar space—visit strange planets and survey strange solar systems.

While he did not forget his sweetheart—the thought of her was often in his mind, and the fact that her future was so intimately connected with his own gave to every action a new meaning—he had such a multitude of things to do and was so eager to get them all done at once that day after day went by and he could not find time to call upon her.

Crane remonstrated in vain. His protests against Seaton's incessant work had no effect. Seaton insisted that he *must* fix firmly just a few more points before they eluded him, and stuck doggedly to his task.

Finally, Crane laid his work aside and went to call upon the girl. He found her just leaving home, and fell into step beside her. For awhile she tried to rouse herself to be entertaining, or at least friendly, but the usual ease with which she chatted had deserted her, and her false gayety did not deceive the keen-minded Crane for an instant. Soon the two were silent as they walked along together. Crane's thoughts were on the beautiful girl beside him, and on the splendid young genius under his roof, so deeply immersed in his problem that he was insensible to everything else.

"I have just left Dick," Crane said suddenly, and paying no attention to her startled glance. "Did you ever in your life see anyone with his singleness of purpose? With all his brilliance, one idea at a time is all that he seems capable of—though that is probably why he is such a genius. He is working himself insane. Has he told you about leaving the Bureau?"

"No. Has he? Has it anything to do with what happened that day at the laboratory? I haven't seen him since the accident, or discovery, whichever it was, happened. He came to see me at half-past ten, when he was invited for dinner—oh, Martin, I had been *so* angry!—and he told such a preposterous story, I've been wondering since if I didn't dream it."

"No, you didn't dream it, no matter how wild it sounded. He said it, and it is all true. I cannot explain it to you; Dick himself cannot explain it, even to me. But I can give you an idea of what we both think it may come to."

"Yes, do."

"Well, he has discovered something that makes copper act mighty queer—knocks it off its feet, so to speak. That day a piece went up

and never did come down."

"Yes, that is what is so preposterous!"

"Just a moment, please," replied the imperturbable Crane. "You should know that nothing ordinary can account for Dick's behavior, and after what I have seen this last week I shall never again think anything preposterous. As I said, this piece of copper departed, *via* the window, for scenes unknown. As far as a pair of good binoculars could follow it, it held to a perfectly straight course toward those scenes. We intend to follow it in some suitable vehicle."

He paused, looking at his companion's face, but she did not speak.

"Building the conveyance is where I come in," he continued in his matter-of-fact voice. "As you know, I happen to have almost as much money as Dick has brains, and some day, before the summer is over, we expect to go somewhere. We do not know where, but it will be a long way from this earth."

There was a silence, then Dorothy said, helplessly:

"Well, go on.... I can't understand...."

"Neither can I. All I know is that Dick wants to build a heavy steel hull, and he is going to put something inside it that will take us out into space. Only occasionally do I see a little light as he tries to explain the mechanism of the thing to me."

After enjoining upon her the strictest secrecy he repeated the story that Seaton had told him, and informed her as to the present condition of affairs.

"It's no wonder the other chemists thought he was crazy, is it, Martin?"

"No, especially after the failure of his demonstration the next morning. You see, he tried to prove to the others that he was right, and nothing happened. He has found out since that an electrical machine in another room, which was not running that morning, played a very important part. When the copper refused to act as it had the night before they all took the snap judgment that he had

suffered an attack of temporary insanity, and that the solution was worthless. They called him 'Nobody Holme'."

"It almost fits, at that!" exclaimed Dorothy, laughing.

"But if he thought of that," she added, thoughtfully, "if he was brilliant enough to build up such a wonderful theory ... think out such a thing as actually traveling to the stars ... all on such a slight foundation of fact ... I wonder why he couldn't have told me?"

She hadn't meant to utter the last thought. Nobody must know how being left out of it had hurt her, and she would have recalled the words if she could. Crane understood, and answered loyally.

"He will tell you all about it very soon, never fear. His is the mind of a great scientist, working on a subject of which but very few men have even an inkling. I am certain that the only reason he thought of me is that he could not finance the investigation alone. Never think for an instant that his absorption implies a lack of fondness for you. You are his anchor, his only hold on known things. In fact, it was about this that I came to see you. Dick is working himself at a rate that not even a machine can stand. He eats hardly anything, and if he sleeps at all, I have never caught him at it. That idea is driving him day and night, and if he goes on the way he is going, it means a breakdown. I do not know whether you can make him listen to reason or not—certainly no one else can. If you think you can do it, that is to be your job, and it will be the biggest one of the three."

"How well you understand him," Dorothy said, after a pause. "You make me feel ashamed, Martin. I should have known without being told. Then I wouldn't have had these nasty little doubts about him."

"I should call them perfectly natural, considering the circumstances," he answered. "Men with minds like Dick's are rare. They work on only one track. Your part will be hard. He will come to you, bursting with news and aching to tell you all about his theories and facts and calculations, and you must try to take his mind off the whole thing and make him think of something else. It looks impossible to me."

The smile had come back to Dorothy's face. Her head, graced by its wealth of gleaming auburn hair, was borne proudly, and glancing mischief lit her violet eyes.

"Didn't you just tell me nothing is impossible? You know, Martin, that I can make Dicky forget everything, even interstellar—did I get that word right?—space itself, with my violin."

"Trying to beguile a scientist from his hobby is comparable only to luring a drug addict away from his vice ... but I would not be surprised if you could do it," he slowly replied.

For he had heard her play. She and Seaton had been caught near his home by a sudden shower while on horseback, and had dashed in for shelter. While the rain beat outside and while Shiro was preparing one of his famous suppers, Crane had suggested that she pass the time by playing his "fiddle." Dorothy realized, with the first sweep of the bow, that she was playing a Stradivarius, the like of which she had played before only in her dreams. She forgot her listeners, forgot the time and the place, and poured out in her music all the beauty and tenderness of her nature. Soft and full the tones filled the room, and in Crane's vision there rose a home filled with happy work, with laughter and companionship, with playing children who turned their faces to their mother as do flowers to the light. Sensing the girl's dreams as the music filled his ears, he realized as never before in his busy, purposeful life how beautiful a home with the right woman could be. No thought of love for Dorothy entered his mind, for he knew that the love existing between her and his friend was of the kind that nothing could alter, but he felt that she had unwittingly given him a great gift. Often thereafter in his lonely hours he had imagined that dream-home, and nothing less than its perfection would ever satisfy him.

For a time they walked on in silence. On Dorothy's face was a tender look, the reflection of her happy thoughts, and in Crane's mind floated again the vision of his ideal home, the home whose central

figure he was unable to visualize. At last she turned and placed her hand on his arm.

"You have done a great deal for me—for us," she said simply. "I wish there were something I could do for you in return."

"You have already done much more than that for me, Dorothy," he answered, more slowly even than usual. "It is hard for me to express just what it is, but I want you to know that you and Dick mean much to me.... You are the first real woman I have ever known, and some day, if life is good to me, I hope to have some girl as lovely care for me."

Dorothy's sensitive face flushed warmly. So unexpected and sincere was his praise that it made her feel both proud and humble. She had never realized that this quiet, apparently unimaginative man had seen all the ideals she expressed in her music. A woman expects to appear lovely to her lover, and to the men who would be her lovers if they could, but here was a man who neither sought nor expected any favors, saying that he wanted some girl as lovely for his own. Truly it was a compliment to be cherished.

After they had returned to the house and Crane had taken his departure, Dorothy heard the purr of a rapidly approaching motorcycle, and her heart leaped as she went to the door to welcome her lover.

"It seems like a month since I saw you last, sweetheart!" he exclaimed, as he lifted her clear from the floor in a passionate embrace and kissed in turn her lips, her eyes, the tip of her nose, the elusive dimple in her cheek, and the adorable curve of her neck.

"It seems longer than that to me, Dicky. I was perfectly miserable until Martin called this afternoon and explained what you have been doing."

"Yes, I met him on the way over. But honestly, Dottie, I simply couldn't get away. I wanted to, the worst way, but everything went so slow...."

"Slow? When you have a whole laboratory installed in a week? What would you call speed?"

"About two days. And then, there were a lot of little ideas that had to be nailed down before they got away from me. This is a horribly big job, Dottie, and when a fellow gets into it he can't quit. But you know that I love you just the same, even though I do appear to neglect you," he continued with fierce intensity. "I love you with everything there is in me. I love you, mind, body and spirit; love you as a man should love the one and only woman. For you are the only woman, there never was and never will be another. I love you morally, physically, intellectually, and every other way there is, for the perfect little darling that you are."

She moved in his embrace and her arms tightened about his neck.

"You are the nearest thing to absolute perfection that ever came into this imperfect world," he continued. "Just to think of a girl of your sheer beauty, your ability, your charm, your all-round perfection, being engaged to a thing like me, makes me dizzy—but I sure do love you, little girl of mine. I will love you as long as we live, and afterward, my soul will love your soul throughout eternity. You know that, sweetheart girl."

"Oh, Dick!" she whispered, her soul shaken with response to his love. "I never dreamed it possible for a woman to love as I love you. 'Whither thou goest....'"

Her voice failed in the tempest of her emotion, and they clung together in silence.

They were finally interrupted by Dorothy's stately and gracious mother, who came in to greet Seaton and invite him to have dinner with them.

"I knew that Dot would forget such an unimportant matter," she said, with a glint of Dorothy's own mischief in her eyes.

As they went into the dining-room Dorothy was amazed to see the changes that six days had wrought in Seaton. His face looked thin, almost haggard. Fine lines had made their appearance at the corners of his eyes and around his mouth, and faint but unmistakable blue rings encircled his eyes.

"You have been working too hard, boy," she reproved him gravely.

"Oh, no," he rejoined lightly. "I'm all right, I never felt better. Why, I could whip a rattlesnake right now, and give him the first bite!"

She laughed at his reply, but the look of concern did not leave her face. As soon as they were seated at the table she turned to her father, a clean-cut, gray-haired man of fifty, known as one of the shrewdest attorneys in the city.

"Daddy," she demanded, "what do you mean by being elected director in the Seaton-Crane Company and not telling me anything about it?"

"Daughter," he replied in the same tone, "what do you mean by asking such a question as that? Don't you know that it is a lawyer's business to get information, and to give it out only to paying clients? However, I can tell you all I know about the Seaton-Crane Company without adding to your store of knowledge at all. I was present at one meeting, gravely voted 'aye' once, and that is all."

"Didn't you draw up the articles of incorporation?"

"I am doing it, yes; but they don't mean anything. They merely empower the Company to do anything it wants to, the same as other large companies do." Then, after a quick but searching glance at Seaton's worn face and a warning glance at his daughter, he remarked:

"I read in the *Star* this evening that Enright and Stanwix will probably make the Australian Davis Cup team, and that the Hawaiian with the unpronounceable name has broken three or four more world's records. What do you think of our tennis chances this year, Dick?"

Dorothy flushed, and the conversation, steered by the lawyer into the safer channels, turned to tennis, swimming, and other sports. Seaton, whose plate was unobtrusively kept full by Mr. Vaneman, ate such a dinner as he had not eaten in weeks. After the meal was over they all went into the spacious living-room, where the men ensconced themselves in comfortable Morris chairs with long, black cigars between their teeth, and all four engaged in a spirited discussion of various topics of the day. After a time, the older couple left the room, the lawyer going into his study to work, as he always did in the evening.

"Well, Dicky, how's everything?" Dorothy asked, unthinkingly.

The result of this innocent question was astonishing. Seaton leaped to his feet. The problem, dormant for two hours, was again in complete possession of his mind.

"Rotten!" he snapped, striding back and forth and brandishing his half-smoked cigar. "My head is so thick that it takes a thousand years for an idea to filter into it. I should have the whole thing clear by this time, but I haven't. There's something, some little factor, that I can't get. I've almost had it a dozen times, but it always gets away from me. I know that the force is there and I can liberate it, but I can't work out a system of control until I can understand exactly why it acts the way it does." Then, more slowly, thinking aloud rather than addressing the girl:

"The force is attraction toward all matter, generated by the vibrations of all the constituent electrons in parallel planes. It is directed along a line perpendicular to the plane of vibration at its center, and approaches infinity as the angle theta approaches the limit of Pi divided by two. Therefore, by shifting the axis of rotation or the plane of vibration thus making theta vary between the limits of zero and Pi divided by two...."

He was interrupted by Dorothy, who, mortified by her thoughtlessness in getting him started, had sprung up and seized him by the arm.

"Sit down, Dicky!" she implored. "Sit down, you're rocking the boat! Save your mathematics for Martin. Don't you know that I could never find out why 'x' was equal to 'y' or to anything else in algebra?"

She led him back to his chair, where he drew her down to a seat on the arm beside him.

"Whom do you love?" she whispered gayly in his ear.

After a time she freed herself.

"I haven't practised today. Don't you want me to play for you a little?"

"Fine business, Dottie. When you play a violin, it talks."

She took down her violin and played; first his favorites, crashing selections from operas and solos by the great masters, abounding in harmonies on two strings. Then she changed to reveries and soft, plaintive melodies. Seaton listened with profound enjoyment. Under the spell of the music he relaxed, pushed out the footrest of the chair, and lay back at ease, smoking dreamily. The cigar finished and his hands at rest, his eyes closed of themselves. The music, now a crooning lullaby, grew softer and slower, until his deep and regular breathing showed that he was sound asleep. She stopped playing and sat watching him intently, her violin in readiness to play again, if he should show the least sign of waking, but there was no such sign. Freed from the tyranny of the mighty brain which had been driving it so unmercifully, his body was making up for many hours of lost sleep.

Assured that he was really asleep, Dorothy tip-toed to her father's study and quietly went in.

"Daddy, Dick is asleep out there in the chair. What shall we do with him?"

"Good work, Dottie Dimple. I heard you playing him to sleep—you almost put me to sleep as well. I'll get a blanket and we'll put him to bed right where he is."

"Dear old Dad," she said softly, sitting on the arm of his chair and rubbing her cheek against his. "You always did understand, didn't you?"

"I try to, Kitten," he answered, pulling her ear. "Seaton is too good a man to see go to pieces when it can be prevented. That is why I signalled you to keep the talk off the company and his work. One of the best lawyers I ever knew, a real genius, went to pieces that same way. He was on a big, almost an impossible, case. He couldn't think of anything else, didn't eat or sleep much for months. He won the case, but it broke him. But he wasn't in love with a big, red-headed beauty of a girl, and so didn't have her to fiddle him to sleep.

"Well, I'll go get the blanket," he concluded, with a sudden change in his tone.

In a few moments he returned and they went into the living-room together. Seaton lay in exactly the same position, only the regular lifting of his powerful chest showing that he was alive.

"I think we had better...."

"Sh ... sh," interrupted the girl in an intense whisper. "You'll wake him up, Daddy."

"Bosh! You couldn't wake him up with a club. His own name might rouse him, particularly if you said it; no other ordinary sound would. I started to say that I think we had better put him to bed on the davenport. He would be more comfortable."

"But that would surely wake him. And he's so big...."

"Oh, no, it wouldn't, unless I drop him on the floor. And he doesn't weigh much over two hundred, does he?"

"About ten or eleven pounds."

"Even though I am a lawyer, and old and decrepit, I can still handle that much."

With Dorothy anxiously watching the proceeding and trying to help, Vaneman picked Seaton up out of the chair, with some effort, and carried him across the room. The sleeping man muttered as if in protest at being disturbed, but made no other sign of consciousness. The lawyer then calmly removed Seaton's shoes and collar, while the girl arranged pillows under his head and tucked the blanket around him. Vaneman bent a quizzical glance upon his daughter, under which a flaming blush spread from her throat to her hair.

"Well," she said, defiantly, "I'm going to, anyway."

"My dear, of course you are. If you didn't, I would disown you."

As her father turned away, Dorothy knelt beside her lover and pressed her lips tightly to his.

"Good night, sweetheart," she murmured.

"'Night," he muttered in his sleep, as his lips responded faintly to her caress.

Vaneman waited for his daughter, and when she appeared, the blush again suffusing her face, he put his arm around her.

"Dorothy," he said at the door of her room, using her full name, a very unusual thing for him, "the father of such a girl as you are hates to lose her, but I advise you to stick to that boy. Believe in him and trust him, no matter what happens. He is a real man."

"I know it, Dad ... thank you. I had a touch of the blues today, but I never will again. I think more of his little finger than I do of all the other men I ever knew, put together. But how do you know him so well? I know him, of course, but that's different."

"I have various ways of getting information. I know Dick Seaton better than you do—better than he knows himself. I have known all about every man who ever looked at you twice. I have been afraid once or twice that I would have to take a hand, but you saw them right, just as you see Seaton right. For some time I have been afraid

of the thought of your marrying, the young men in your social set are such a hopeless lot, but I am not any more. When I hand my little girl over to her husband next October I can be really happy with you, instead of anxious for you. That's how well I know Richard Seaton.... Well, good night, daughter mine."

"Good night, Daddy dear," she replied, throwing her arms around his neck. "I have the finest Dad a girl ever had, and the finest ... boy. Good night."

It was three o'clock the following afternoon when Seaton appeared in the laboratory. His long rest had removed all the signs of overwork and he was his alert, vigorous self, but when Crane saw him and called out a cheery greeting he returned it with a sheepish smile.

"Don't say anything, Martin—I'm thinking it all, and then some. I made a regular fool of myself last night. Went to sleep in a chair and slept seventeen hours without a break. I never felt so cheap in my life."

"You were worn out, Dick, and you know it. That sleep put you on your feet again, and I hope you will have sense enough to take care of yourself after this. I warn you now, Dick, that if you start any more of that midnight work I will simply call Dorothy over here and have her take charge of you."

"That's it, Mart, rub it in. Don't you see that I am flat on my back, with all four paws in the air? But I'm going to sleep every night. I promised Dottie to go to bed not later than twelve, if I have to quit right in the middle of an idea, and I told her that I was coming out to see her every other evening and every Sunday. But here's the dope. I've got that missing factor in my theory—got it while I was eating breakfast this afternoon."

"If you had eaten and slept regularly here and kept yourself fit you would have seen it before."

"Yes, I guess that's right, too. If I miss a meal or a sleep from now on I want you to sand-bag me. But never mind that. Here's the explanation. We doped out before, you know, that the force is something like magnetism, and is generated when the coil causes the electrons of this specially-treated copper to vibrate in parallel planes. The knotty point was what could be the effect of a weak electric current in liberating the power. I've got it! It shifts the plane of vibration of the electrons!"

"It is impossible to shift that plane, Dick. It is fixed by physical state, just as speed is fixed by temperature."

"No, it isn't. That is, it usually is, but in this case it may be shifted. Here's the mathematical proof."

So saying, Seaton went over to the drafting table, tacked down a huge sheet of paper, and sketched rapidly, explaining as he drew. Soon the two men were engaged in a profound mathematical argument. Sheet after sheet of paper was filled with equations and calculations, and the table was covered with reference books. After two hours of intense study and hot discussion Crane's face took on a look of dawning comprehension, which changed to amazement and then to joy. For the first time in Seaton's long acquaintance with him, his habitual calm was broken.

"By George!" he cried, shaking Seaton's hand in both of his. "I think you have it! But how under the sun did you get the idea? That calculus isn't in any of the books. Where did you get it? Dick, you're a wonder!"

"I don't know how I got the idea, it merely came to me. But that Math is right—it's *got* to be right, no other conclusion is possible. Now, if that calc. is right, and I know it is, do you see how narrow the permissible limits of shifting are? Look at equation 236. Believe me, I sure was lucky, that day in the Bureau. It's a wonder I didn't blow up the whole works. Suppose I hadn't been working with a storage cell that gave only four amperes at two volts? That's unusually low, you know, for that kind of work."

Crane carefully studied the equation referred to and figured for a moment.

"In that case the limit would be exactly eight watts. Anything above that means instant decomposition?"

"Yes."

Crane whistled, a long, low whistle.

"And that bath weighed forty pounds—enough to vaporize the whole planet. Dick, it cannot be possible."

"It doesn't seem that way, but it is. It certainly makes me turn cold all over, though, to think of what might have happened. You know now why I wouldn't touch the solution again until I had this stuff worked out?"

"I certainly do. You should be even more afraid of it now. I don't mind nitroglycerin or T.N.T., but anything like that is merely a child's plaything compared to this. Perhaps we had better drop it?"

"Not in seven thousand years. The mere fact that I was so lucky at first proves that Fate intended this thing to be my oyster. However, I'll not tempt the old lady any farther. I'm going to start with one millionth of a volt, and will use a piece of copper visible only under a microscope. But there's absolutely no danger, now that we know what it is. I can make it eat out of my hand. Look at this equation here, though. That being true, it looks as though you could get the same explosive effect by taking a piece of copper which had once been partially decomposed and subjecting it to some force, say an extremely heavy current. Again under the influence of the coil, a small current would explode it, wouldn't it?"

"It looks that way, from those figures."

"Say, wouldn't that make some bullet? Unstabilize a piece of copper in that way and put it inside a rifle bullet, arranged to make a short circuit on impact. By making the piece of copper barely visible you could have the explosive effect of only a few sticks of dynamite—a

piece the size of a pea would obliterate New York City. But that's a long way from our flying-machine."

"Perhaps not so far as you think. When we explore new worlds it might be a good idea to have a liberal supply of such ammunition, of various weights, for emergencies."

"It might, at that. Here's another point in equation 249. Suppose the unstabilized copper were treated with a very weak current, not strong enough to explode it? A sort of borderline condition? The energy would be liberated, apparently, but in an entirely new way. Wonder what would happen? I can't see from the theory—have to work it out. And here's another somewhat similar condition, right here, that will need investigating. I've sure got a lot of experimental work ahead of me before I'll know anything. How're things going with you?"

"I have the drawings and blue-prints of the ship itself done, and working sketches of the commercial power-plant. I am working now on the details, such as navigating instruments, food, water, and air supplies, special motors, and all of the hundred and one little things that must be taken into consideration. Then, as soon as you get the power under control, we will have only to sketch in the details of the power-plant and its supports before we can begin construction."

"Fine, Mart, that's great. Well, let's get busy!"

CHAPTER IV

Steel Liberates Energy—Unexpectedly

DuQuesne was in his laboratory, poring over an abstruse article in a foreign journal of science, when Scott came breezily in with a newspaper in his hand, across the front page of which stretched great headlines.

"Hello, Blackie!" he called. "Come down to earth and listen to this tale of mystery from that world-renowned fount of exactitude and authority, the *Washington Clarion*. Some miscreant has piled up and touched off a few thousand tons of T.N.T. and picric acid up in the hills. Read about it, it's good."

DuQuesne read:

MYSTERIOUS EXPLOSION!

Mountain Village Wiped Out of Existence!
Two Hundred Dead, None Injured!

Force Felt All Over World. Cause Unknown.
Scientists Baffled.

Harper's Ferry. March 26.—At 10: 23 A.M. today, the village of Bankerville, about thirty miles north of this place, was totally destroyed by an explosion of such terrific violence that seismographs all over the world recorded the shock, and that windows were shattered even in this city. A thick pall of dust and smoke was observed in the sky and parties set out immediately. They found, instead of the little mountain village, nothing except an immense, crater-like hole in the ground, some two miles in diameter and variously estimated at from two to three thousand feet deep. No survivors have been found, no bodies have been recovered. The entire village, with its two hundred inhabitants, has been wiped out of existence. Not so much as a splinter of wood or a fragment of brick from any of the houses can be found.

> Scientists are unable to account for the terrific force of the explosion, which far exceeded that of the most violent explosive known.

"Hm ... m. That sounds reasonable, doesn't it?" asked DuQuesne, sarcastically, as he finished reading.

"It sure does," replied Scott, grinning. "What'd'you suppose it was? Think the reporter heard a tire blow out on Pennsylvania Avenue?"

"Perhaps. Nothing to it, anyway," as he turned back to his work.

As soon as the visitor had gone a sneering smile spread over DuQuesne's face and he picked up his telephone.

"The fool did it. That will cure him of sucking eggs!" he muttered. "Operator? DuQuesne speaking. I am expecting a call this afternoon. Please ask him to call me at my house.... Thank you."

"Fred," he called to his helper, "if anyone wants me, tell them that I have gone home."

He left the building and stepped into his car. In less than half an hour he arrived at his house on Park Road, overlooking beautiful Rock Creek Park. Here he lived alone save for an old colored couple who were his servants.

In the busiest part of the afternoon Chambers rushed unannounced into Brookings' private office. His face was white as chalk.

"Read that, Mr. Brookings!" he gasped, thrusting the *Clarion* extra into his hand.

Brookings read the news of the explosion, then looked at his chief chemist, his face turning gray.

"Yes, sir, that was our laboratory," said Chambers, dully.

"The fool! Didn't you tell him to work with small quantities?"

"I did. He said not to worry, that he was taking no chances, that he would never have more than a gram of copper on hand at once in

the whole laboratory."

"Well ... I'll ... be ... damned!" Slowly turning to the telephone, Brookings called a number and asked for Doctor DuQuesne, then called another.

"Brookings speaking. I would like to see you this afternoon. Will you be at home?... I'll be there in about an hour. Good bye."

When Brookings arrived he was shown into DuQuesne's study. The two men shook hands perfunctorily and sat down, the scientist waiting for the other to speak.

"Well, DuQuesne, you were right. Our man couldn't handle it. But of course you didn't mean the terms you mentioned before?"

DuQuesne's lips smiled; a hard, cold smile.

"You know what I said, Brookings. Those terms are now doubled, twenty thousand and ten million. Nothing else goes."

"I expected it, since you never back down. The Corporation expects to pay for its mistakes. We accept your terms and I have contracts here for your services as research director, at a salary of two hundred and forty thousand dollars per annum, with the bonus and royalties you demand."

DuQuesne glanced over the documents and thrust them into his pocket.

"I'll go over these with my attorney to-night, and mail one back to you if he approves the contract. In the meantime, we may as well get down to business."

"What would you suggest?" asked Brookings.

"You people stole the solution, I see...."

"Don't use such harsh language, Doctor, it's...."

"Why not? I'm for direct action, first, last and all the time. This thing is too important to permit of mincing words or actions, it's a waste of time. Have you the solution here?"

"Yes, here it is," drawing the bottle from his pocket.

"Where's the rest of it?" asked DuQuesne as he noted the size of the bottle.

"All that we found is here, except about a teaspoonful which the expert had to work on," replied Brookings. "We didn't get it all, only half of it. The rest of it was diluted with water, so that it wouldn't be missed. After we get started, if you find it works out satisfactorily, we can procure the rest of it. That will certainly cause a disturbance, but it may be necessary...."

"Half of it!" interrupted DuQuesne. "You haven't one-twentieth of it here. When I saw it in the Bureau, Seaton had about five hundred milliliters—over a pint—of it. I wonder if you're double-crossing me again?"

"No, you're not," he continued, paying no attention to the other's protestations of innocence. "You're paying me too much to want to block me now. The crook you sent out to get the stuff turned in only this much. Do you suppose he is holding out on us?"

"No. You know Perkins and his methods."

"He missed the main bottle, then. That's where your methods make me tired. When I want anything done, I believe in doing it myself, then I know it's done right. As to what I suggest, that's easy. I will take three or four of Perkins' gunmen tonight. We'll go out there and raid the place. We'll shoot Seaton and anybody else who gets in the way. We'll dynamite the safe and take their solution, plans, notes, money, and anything else we want."

"No, no, Doctor, that's too crude altogether. If we have to do that, let it be only as a last resort."

"I say do it first, then we know we will get results. I tell you I'm afraid of pussyfooting and gumshoeing around Seaton and Crane. I

used to think that Seaton was easy, but he seems to have developed greatly in the last few weeks, and Crane never was anybody's fool. Together they make a combination hard to beat. Brute force, applied without warning, is our best bet, and there's no danger, you know that. We've got away clean with lots worse stuff."

"It's always dangerous, and we could wink at such tactics only after everything else has failed. Why not work it out from this solution we have, and then quietly get the rest of it? After we have it worked out, Seaton might get into an accident on his motorcycle, and we could prove by the state of development of our plans that we discovered it long ago."

"Because developing the stuff is highly dangerous, as you have found out. Even Seaton wouldn't have been alive now if he hadn't had a lot of luck at the start. Then, too, it would take too much time. Seaton has already developed it—you see, I haven't been asleep and I know what he has done, just as well as you do—and why should we go through all that slow and dangerous experimental work when we can get their notes and plans as well as not? There is bound to be trouble anyway when we steal all their solution, even though they haven't missed this little bit of it yet, and it might as well come now as any other time. The Corporation is amply protected, and I am still a Government chemist. Nobody even suspects that I am in on this deal. I will never see you except after hours and in private, and will never come near your offices. We will be so cautious that, even if anyone should get suspicious, they can't possibly link us together, and until they do link us together, we are all safe. No, Brookings, a raid in force is the only sure and safe way. What is more natural than a burglary of a rich man's house? It will be a simple affair. The police will stir around for a few days, then it will all be forgotten and we can go ahead. Nobody will suspect anything except Crane, if he is alive, and he won't be able to do anything."

So the argument raged. Brookings was convinced that DuQuesne was right in wanting to get possession of all the solution, and also of the working notes and plans, but would not agree to the means suggested, holding out for quieter and more devious, but less actionable methods. Finally he ended the argument with a flat

refusal to countenance the raid, and the scientist was forced to yield, although he declared that they would have to use his methods in the end, and that it would save time, money, and perhaps lives, if they were used first. Brookings then took from his pocket his wireless and called Perkins. He told him of the larger bottle of solution, instructing him to secure it and to bring back all plans, notes, and other material he could find which in any way pertained to the matter in hand. Then, after promising DuQuesne to keep him informed of developments, and giving him an instrument similar to the one he himself carried, Brookings took his leave.

Seaton had worked from early morning until late at night, but had rigorously kept his promise to Dorothy. He had slept seven or eight hours every night and had called upon her regularly, returning from the visits with ever-keener zest for his work.

Late in the afternoon, upon the day of the explosion, Seaton stepped into Crane's shop with a mass of notes in his hand.

"Well, Mart, I've got it—some of it, at least. The power is just what we figured it, so immensely large as to be beyond belief. I have found:

"First: That it is a practically irresistible *pull* along the axis of the treated wire or bar. It is apparently focused at infinity, as near-by objects are not affected.

"Second: I have studied two of the border-line regions of current we discussed. I have found that in one the power is liberated as a similar attractive force but is focused upon the first object in line with the axis of the bar. As long as the current is applied it remains focused upon that object, no matter what comes between. In the second border-line condition the power is liberated as a terrific repulsion.

"Third: That the copper is completely transformed into available energy, there being no heat whatever liberated.

"Fourth: Most important of all, that the X acts only as a catalyst for the copper and is not itself consumed, so that an infinitesimally thin coating is all that is required."

"You certainly have found out a great deal about it," replied Crane, who had been listening with the closest attention, a look of admiration upon his face. "You have all the essential facts right there. Now we can go ahead and put in the details which will finish up the plans completely. Also, one of those points solves my hardest problem, that of getting back to the earth after we lose sight of it. We can make a small bar in that border-line condition and focus it upon the earth, and we can use that repulsive property to ward off any meteorites which may come too close to us."

"That's right. I never thought of using those points for anything. I found them out incidentally, and merely mentioned them as interesting facts. I have a model of the main bar built, though, that will lift me into the air and pull me all around. Want to see it work?"

"I certainly do."

As they were going out to the landing field Shiro called to them and they turned back to the house, learning that Dorothy and her father had just arrived.

"Hello, boys!" Dorothy said, bestowing her radiant smile upon them both as Seaton seized her hand. "Dad and I came out to see that you were taking care of yourselves, and to see what you are doing. Are visitors allowed?"

"No," replied Seaton promptly. "All visitors are barred. Members of the firm and members of the family, however, are not classed as visitors."

"You came at the right time," said Crane, smiling. "Dick has just finished a model, and was about to demonstrate it to me when you arrived. Come with us and watch the...."

"I object," interrupted Seaton. "It is a highly undignified performance as yet, and...."

"Objection overruled," interposed the lawyer, decisively. "You are too young and impetuous to have any dignity; therefore, any performance not undignified would be impossible, *a priori*. The demonstration will proceed."

Laughing merrily, the four made their way to the testing shed, in front of which Seaton donned a heavy leather harness, buckled about his shoulders, body and legs; to which were attached numerous handles, switches, boxes and other pieces of apparatus. He snapped the switch which started the Tesla coil in the shed and pressed a button on an instrument in his hand, attached to his harness by a small steel cable. Instantly there was a creak of straining leather and he shot vertically into the air for perhaps a hundred feet, where he stopped and remained motionless for a few moments. Then the watchers saw him point his arm and dart in the direction in which he pointed. By merely pointing, apparently, he changed his direction at will; going up and down, forward and backward, describing circles and loops and figures of eight. After a few minutes of this display he descended, slowing up abruptly as he neared the ground and making an easy landing.

"There, oh beauteous lady and esteemed sirs," he began, with a low bow and a sweeping flourish—when there was a snap, and he was jerked sidewise off his feet. In bowing, his cumbersome harness had pressed the controlling switch and the instrument he held in his hand, which contained the power-plant, or bar, had torn itself loose from its buckle. Instead of being within easy reach of his hand it was over six feet away, and was dragging him helplessly after it, straight toward the high stone wall! But only momentarily was he helpless, his keen mind discovering a way out of the predicament even as he managed to scramble to his feet in spite of the rapid pace. Throwing his body sidewise and reaching out his long arm as far as possible toward the bar, he succeeded in swinging it around so that he was running back toward the party and the spacious landing field. Dorothy and her father were standing motionless, staring at Seaton; the former with terror in her eyes, the latter in blank amazement.

Crane had darted to the switch controlling the coil, and was reaching for it when Seaton passed them.

"Don't touch that switch!" he yelled. "I'll catch that thing yet!"

At this evidence that Seaton still thought himself master of the situation, Crane began to laugh, though he still kept his hand near the controlling switch. Dorothy, relieved of her fear for her lover's safety, could not help but join him, so ludicrous were Seaton's antics. The bar was straight out in front of him, about five feet above the ground, going somewhat faster than a man could run. It turned now to the right, now to the left, as his weight was thrown to one side or the other. Seaton, dragged along like a small boy trying to hold a runaway calf by the tail, was covering the ground in prodigious leaps and bounds; at the same time pulling himself up, hand over hand, to the bar in front of him. He soon reached it, seized it in both hands, again darted into the air, and descended lightly near the others, who were rocking with laughter.

"I said it would be undignified," chuckled Seaton, rather short of breath, "but I didn't know just how much so it was going to be."

Dorothy tucked her fingers into his hand.

"Are you hurt anywhere, Dick?"

"Not a bit. He led me a great chase, though."

"I was scared to death until you told Martin to let the switch alone. But it was funny then! I hadn't noticed your resemblance to a jumping-jack before. Won't you do it again sometime and let us take a movie of it?"

"That was as good as any show in town, Dick," said the lawyer, wiping his eyes, "but you must be more careful. Next time, it might not be funny at all."

"There will be no next time for this rig," replied Seaton. "This is merely to show us that our ideas are all right. The next trip will be in a full-scale, completely-equipped boat."

"It was perfectly wonderful," declared Dorothy. "I know this first flight of yours will be a turning-point or something in history. I don't pretend to understand how you did it—the sight of you standing still up there in the air made me wonder if I really were awake, even though I knew what to expect—but we wouldn't have missed it for worlds, would we, Dad?"

"No. I am very glad that we saw the first demonstration. The world has never before seen anything like it, and you two men will rank as two of the greatest discoverers."

"Seaton will, you mean," replied Crane, uncomfortably. "You know I didn't have anything to do with it."

"It's nearly all yours," denied Seaton. "Without your ideas I would have lost myself in space in my first attempt."

"You are both wrong," said Vaneman. "You, Martin, haven't enough imagination; and you, Dick, have altogether too much, for either of you to have done this alone. The honor will be divided equally between you."

He turned to Crane as Dorothy and Seaton set out toward the house.

"What are you going to do with it, commercially? Dick, of course, hasn't thought of anything except this space-car—equally of course, you have?"

"Yes. Knowing the general nature of the power and confident that Dick would control it, I have already drawn up sketches for a power-plant installation of five hundred thousand electrical horsepower, which will enable us to sell power for less than one-tenth of a cent per kilowatt-hour and still return twenty percent annual dividends. However, the power-plant comes after the flyer."

"Why? Why not build the power-plant first, and take the pleasure trip afterward?"

"There are several reasons. The principal one is that Dick and I would rather be off exploring new worlds, while the other members of the Seaton-Crane Company, Engineers, build the power-plant."

During the talk the men had reached the house, into which the others had disappeared some time before. Upon Crane's invitation, Vaneman and his daughter stayed to dinner, and Dorothy played for awhile upon Crane's wonderful violin. The rest of the evening was spent in animated discussion of the realization of Seaton's dreams of flying without wings and beyond the supporting atmosphere. Seaton and Crane did their best to explain to the non-technical visitors how such flight was possible.

"Well, I am beginning to understand it a little," said Dorothy finally. "In plain language, it is like a big magnet or something, but different. Is that it?"

"That's it exactly," Seaton assured her.

"What are you going to call it? It isn't like anything else that ever was. Already this evening you have called it a bus, a boat, a kite, a star-hound, a wagon, an aerial flivver, a sky-chariot, a space-eating wampus, and I don't know what else. Even Martin has called it a vehicle, a ship, a bird, and a shell. What is its real name?"

"I don't know. It hasn't got any that I know of. What would you suggest, Dottie?"

"I don't know what general name should be applied to them, but for this one there is only one possible name, 'The Skylark.'"

"Exactly right, Dorothy," said Crane.

"Fine!" cried Seaton. "And you shall christen it, Dottie, with a big Florence flask full of absolute vacuum. 'I christen you "The Skylark." BANG!'"

As the guests were leaving, at a late hour, Vaneman said:

"Oh, yes. I bought an extra *Clarion* as we came out. It tells a wild tale of an explosion so violent that science cannot explain it. I don't

suppose it is true, but it may make interesting reading for you two scientific sharps. Good night."

Seaton accompanied Dorothy to the car, bidding her a more intimate farewell on the way. When he returned, Crane, with an unusual expression of concern on his face, handed him the paper without a word.

"What's up, old man? Something in it?" he asked, as he took the paper. He fell silent as he read the first words, and after he had read the entire article he said slowly:

"True, beyond a doubt. Even a *Clarion* reporter couldn't imagine that. It's all intra-atomic energy, all right—some poor devil trying our stunt without my horseshoe in his pocket."

"Think, Dick! Something is wrong somewhere. You know that two people did not discover X at the same time. The answer is that somebody stole your idea, but the idea is worthless without the X. You say that the stuff is extremely rare—where did they get it?"

"That's right, Mart. I never thought of that. The stuff *is* extremely rare. I am supposed to know something about rare metals, and I never heard of it before—there isn't even a gap in the Periodic System in which it belongs. I would bet a hat that we have every milligram known to the world at present."

"Well, then," said the practical Crane. "We had better see whether or not we have all we started with."

Asking Shiro to bring the large bottle from the vault, he opened the living-room safe and brought forth the small vial. The large bottle was still nearly full, the seal upon it unbroken. The vial was apparently exactly as Seaton had left it after he had made his bars.

"Our stuff seems to be all there," said Crane. "It looks as though someone else has discovered it also."

"I don't believe it," said Seaton, their positions now reversed. "It's altogether too rare."

He scanned both bottles narrowly.

"I can tell by taking the densities," he added, and ran up to the laboratory, returning with a Westphal balance in his hand. After testing both solutions he said slowly:

"Well, the mystery is solved. The large bottle has a specific gravity of 1.80, as it had when I prepared it; that in the vial reads only 1.41. Somebody has burglarized this safe and taken almost half of the solution, filling the vial up with colored water. The stuff is so strong that I probably never would have noticed the difference."

"But who could it have been?"

"Search me! But it's nothing to worry about now, anyway, because whoever it was is gone where he'll never do it again. He's taken the solution with him, too, so that nobody else can get it."

"I wish I were sure of that, Dick. The man who tried to do the research work is undoubtedly gone—but who is back of him?"

"Nobody, probably. Who would want to be?"

"To borrow your own phrase, Dick, Scott 'chirped it' when he called you 'Nobody Holme.' For a man with your brains you have the least sense of anybody I know. You know that this thing is worth, as a power project alone, thousands of millions of dollars, and that there are dozens of big concerns who would cheerfully put us both out of the way for a thousandth of that amount. The question is not to find one concern who might be backing a thing like that, but to pick out the one who is backing it."

After thinking deeply for a few moments he went on:

"The idea was taken from your demonstration in the Bureau, either by an eye-witness or by someone who heard about it afterward,

probably the former. Even though it failed, one man saw the possibilities. Who was that man? Who was there?"

"Oh, a lot of the fellows were there. Scott, Smith, Penfield, DuQuesne, Roberts—quite a bunch of them. Let's see—Scott hasn't brains enough to do anything. Smith doesn't know anything about anything except amines. Penfield is a pure scientist, who wouldn't even quote an authority without asking permission. DuQuesne is ... hm-m ... DuQuesne ... he ... I...."

"Yes. DuQuesne. I have heard of him. He's the big black fellow, about your own size? He has the brains, the ability, and the inclination, has he not?"

"Well, I wouldn't want to say that. I don't know him very well, and personal dislike is no ground at all for suspicion, you know."

"Enough to warrant investigation. Is there anyone else who might have reasoned it out as you did, and as DuQuesne possibly could?"

"Not that I remember. But we can count DuQuesne out, anyway, because he called me up this afternoon about some notes on gallium; so he is still in the Bureau. Besides, he wouldn't let anybody else investigate it if he got it. He would do it himself, and I don't think he would have blown himself up. I never did like him very well personally—he's such a cold, inhuman son of a fish—but you've got to hand it to him for ability. He's probably the best man in the world today on that kind of thing."

"No, I do not think that we will count him out yet. He may have had nothing to do with it, but we will have him investigated nevertheless, and will guard against future visitors here."

Turning to the telephone, he called the private number of a well-known detective.

"Prescott? Crane speaking. Sorry to get you out of bed, but I should like to have a complete report upon Dr. Marc C. DuQuesne, of the Rare Metals Laboratory, as soon as possible. Every detail for the last two weeks, every move and every thought if possible. Please keep a good man on him until further notice.... I wish you would send two

or three guards out here right away, to-night; men you can trust and who will stay awake.... Thanks. Good night."

CHAPTER V

Direct Action

Seaton and Crane spent some time developing the object-compass. Crane made a number of these instruments, mounted in gymbals, so that the delicate needles were free to turn in any direction whatever. They were mounted upon jeweled bearings, but bearings made of such great strength, that Seaton protested.

"What's the use, Mart? You don't expect a watch to be treated like a stone-crusher. That needle weighs less than half a gram. Why mount it as though it weighed twenty pounds?"

"To be safe. Remember the acceleration the Lark will be capable of, and also that on some other worlds, which we hope to visit, this needle will weigh more than it does here."

"That's right, Mart, I never thought of that. Anyway, we can't be too safe to suit me."

When the compasses were done and the power through them had been adjusted to one-thousandth of a watt, the lowest they could maintain with accuracy, they focused each instrument upon one of a set of most carefully weighed glass beads, ranging in size from a pin-head up to a large marble, and had the beads taken across the country by Shiro, in order to test the sensitiveness and accuracy of the new instruments. The first test was made at a distance of one hundred miles, the last at nearly three thousand. They found, as they had expected, that from the weight of the object and the time it took the needle to come to rest after being displaced from its line by a gentle tap of the finger, they could easily calculate the distance from the compass to the object. This fact pleased Crane immensely, as it gave him a sure means of navigation in space. The only

objection to its use in measuring earthly distances was its extreme delicacy, the needle focused upon the smallest bead in the lot at a distance of three thousand miles coming to rest in little more than one second.

The question of navigation solved, the two next devoted themselves to perfecting the "X-plosive bullet," as Seaton called it. From his notes and equations Seaton calculated the weight of copper necessary to exert the explosive force of one pound of nitro-glycerin, and weighed out, on the most delicate assay-balance made, various fractions and multiples of this amount of the treated copper, while Crane fitted up the bullets of automatic-pistol cartridges to receive the charges and to explode them on impact.

They placed their blueprints and working notes in the safe, as usual, taking with them only those notes dealing with the object-compass and the X-plosive bullet, upon which they were still working. No one except Shiro knew that the original tracings, from which the blue-prints had been made, and their final, classified notes were always kept in the vault. They cautioned him and the three guards to keep a close watch until they returned. Then they set out in the biplane, to try out the new weapon in a lonely place where the exploding shells could do no damage.

They found that the X-plosive came fully up to expectations. The smallest charge they had prepared, fired by Crane at a great stump a full hundred yards away from the bare, flat-topped knoll that had afforded them a landing-place, tore it bodily from the ground and reduced it to splinters, while the force of the explosion made the two men stagger.

"She sure is big medicine!" laughed Seaton. "Wonder what a real one will do?" and drawing his pistol, he inserted a cartridge carrying a much heavier charge.

"Better be careful with the big ones," cautioned Crane. "What are you going to shoot at?"

"That rock over there," pointing to a huge boulder half a mile away across the small valley. "Want to bet me a dinner I can't hit it?"

"No. You forget that I saw you win the pistol trophy of the District."

The pistol cracked, and when the bullet reached its destination the great stone was obliterated in a vast ball of flame. After a moment there was a deafening report—a crash as though the world were falling to pieces. Both men were hurled violently backward, stumbling and falling flat. Picking themselves up, they looked across the valley at the place where the boulder had stood, to see only an immense cloud of dust, which slowly blew away, revealing a huge hole in the ground. They were silent a moment, awed by the frightful power they had loosed.

"Well, Mart," Seaton broke the silence, "I'll say those one-milligram loads are plenty big enough. If that'd been something coming after us—whether any possible other-world animal, a foreign battleship, or the mythical great sea-serpent himself, it'd be a good Indian now. Yes? No?"

"Yes. When we use the heavier charges we must use long-range rifles. Have you had enough demonstration or do you want to shoot some more?"

"I've had enough, thanks. That last rock I bounced off of was no pillow, I'll tell the world. Besides, it looks as though I'd busted a leg or two off of our noble steed with my shot, and we may have to walk back home."

An examination of the plane, which had been moved many feet and almost overturned by the force of the explosion, revealed no damage that they could not repair on the spot, and dusk saw them speeding through the air toward the distant city.

In response to a summons from his chief, Perkins silently appeared in Brookings' office, without his usual complacent smile.

"Haven't you done anything yet, after all this time?" demanded the magnate. "We're getting tired of this delay."

"I can't help it, Mr. Brookings," replied the subordinate. "They've got detectives from Prescott's all over the place. Our best men have been trying ever since the day of the explosion, but can't do a thing without resorting to violence. I went out there myself and looked them over, without being seen. There isn't a man there with a record, and I haven't been able so far to get anything on any one of them that we can use as a handle."

"No, Prescott's men are hard to do anything with. But can't you...?" Brookings paused significantly.

"I was coming to that. I thought one of them might be seen, and I talked to him a little, over the phone, but I couldn't talk loud enough without consulting you. I mentioned ten, but he held out for twenty-five. Said he wouldn't consider it at all, but he wants to quit Prescott and go into business for himself."

"Go ahead on twenty-five. We want to get action," said Brookings, as he wrote an order on the cashier for twenty-five thousand dollars in small-to-medium bills. "That is cheap enough, considering what DuQuesne's rough stuff would probably cost. Report tomorrow about four, over our private phone—no, I'll come down to the café, it's safer."

The place referred to was the Perkins Café, a high-class restaurant on Pennsylvania Avenue, heavily patronized by the diplomatic, political, financial, and sporting circles of upper-class Washington. It was famous for its discreet waiters, and for the absolutely private rooms. Many of its patrons knew of its unique telephone service, in which each call went through such a devious system of relays that any attempt to trace it was hopeless; they knew that while "The Perkins" would not knowingly lend itself to any violation of law, it was an entirely safe and thoroughly satisfactory place in which to conduct business of the most secret and confidential character; a place from which one could enjoy personal conversation with persons to whom he wished to remain invisible and untraceable: a place which had never been known to "leak." For these reasons it

was really the diplomatic and political center of the country, and over its secret wires had gone, in guarded language, messages that would have rocked the world had they gone astray. It was recognized that the place was occasionally, by its very nature, used for illegal purposes, but it was such a political, financial, and diplomatic necessity that it carried a "Hands Off" sign. It was never investigated by Congress and never raided by the police. Hundreds of telephone calls were handled daily. A man would come in, order something served in a private room, leave a name at the desk, and say that he was expecting a call. There the affair ended. The telephone operators were hand-picked, men of very short memories, carefully trained never to look at a face and never to remember a name or a number. Although the precaution was unnecessary, this shortness of memory was often encouraged by bills of various denominations.

No one except Perkins and the heads of the great World Steel Corporation knew that the urbane and polished proprietor of the café was a criminal of the blackest kind, whose liberty and life itself were dependent upon the will of the Corporation; or that the restaurant was especially planned and maintained as a blind for its underground activities; or that Perkins was holding a position which suited him exactly and which he would not have given up for wealth or glory—that of being the guiding genius who planned nefarious things for the men higher up, and saw to it that they were carried out by the men lower down. He was in constant personal touch with his superiors, but in order to avoid any chance of betrayal he never saw his subordinates personally. Not only were they entirely ignorant of his identity, but all possible means of their tracing him had been foreseen and guarded against. He called them on the telephone, but they never called him. The only possible way in which any of his subordinates could get in touch with him was by means of the wonderful wireless telephone already referred to, developed by a drug-crazed genius who had died shortly after it was perfected. It was a tiny instrument, no larger than a watch, but of practically unlimited range. The controlling central station of the few instruments in existence, from which any instrument could be cut out, changed in tune, or totally destroyed at will, was in Perkins'

office safe. A man intrusted with an unusually important job would receive from an unknown source an instrument, with directions sufficient for its use. As soon as the job was done he would find, upon again attempting to use the telephone, that its interior was so hopelessly wrecked that not even the most skilled artisan could reproduce what it had once been.

At four o'clock Brookings was ushered into the private office of the master criminal, who was plainly ill at ease.

"I've got to report another failure, Mr. Brookings. It's nobody's fault, just one of those things that couldn't be helped. I handled this myself. Our man left the door unlocked and kept the others busy in another room. I had just started to work when Crane's Japanese servant, who was supposed to be asleep, appeared upon the scene. If I hadn't known something about jiu-jutsu myself, he'd have broken my neck. As it was, I barely got away, with the Jap and all three guards close behind me...."

"I'm not interested in excuses," broke in the magnate, angrily. "We'll have to turn it over to DuQuesne after all unless you get something done, and get it done quick. Can't you get to that Jap some way?"

"Certainly I can. I never yet saw the man who couldn't be reached, one way or another. I've had 'Silk' Humphreys, the best fixer in the business, working on him all day, and he'll be neutral before night. If the long green won't quiet him—and I never saw a Jap refuse it yet—a lead pipe will. Silk hasn't reported yet, but I expect to hear from him any minute now, through our man out there."

As he spoke, the almost inaudible buzzer in his pocket gave a signal.

"There he is now," said Perkins, as he took out his wireless instrument. "You might listen in and hear what he has to say."

Brookings took out his own telephone and held it to his ear.

"Hello," Perkins spoke gruffly into the tiny transmitter. "What've you got on your chest?"

"Your foot slipped on the Jap," the stranger replied. "He crabbed the game right. Slats and the big fellow put all the stuff into the box, told us to watch it until they get back tonight—they may be late—then went off in Slats' ship to test something—couldn't find out what. Silk tackled the yellow boy, and went up to fifty grand, but the Jap couldn't see him at all. Silk started to argue, and the Jap didn't do a thing but lay him out, cold. This afternoon, while the Jap was out in the grounds, three stick-up men jumped him. He bumped one of them off with his hands and the others with his gat—one of those big automatics that throw a slug like a cannon. None of us knew he had it. That's all, except that I am quitting Prescott right now. Anything else I can do for you, whoever you are?"

"No. Your job's done."

The conversation closed. Perkins pressed the switch which reduced the interior of the spy's wireless instrument to a fused mass of metal, and Brookings called DuQuesne on the telephone.

"I would like to talk to you," he said. "Shall I come there or would you rather come to my office?"

"I'll come there. They're watching this house. They have one man in front and one in back, a couple of detectaphones in my rooms here, and have coupled onto this telephone.

"Don't worry," he continued calmly as the other made an exclamation of dismay. "Talk ahead as loud as you please—they can't hear you. Do you think that those poor, ignorant flat feet can show me anything about electricity? I'd shoot a jolt along their wires that would burn their ears off if it weren't my cue to act the innocent and absorbed scientist. As it is, their instruments are all registering dense silence. I am deep in study right now, and can't be disturbed!"

"Can you get out?"

"Certainly. I have that same private entrance down beside the house wall and the same tunnel I used before. I'll see you in about fifteen

minutes."

In Brookings' office, DuQuesne told of the constant surveillance over him.

"They suspect me on general principles, I think," he continued. "They are apparently trying to connect me with somebody. I don't think they suspect you at all, and they won't unless they get some better methods. I have devices fitted up to turn the lights off and on, raise and lower the windows, and even cast shadows at certain times. The housekeeper knows that when I go to my library after dinner, I have retired to study, and that it is as much as anyone's life is worth to disturb me. Also, I am well known to be firmly fixed in my habits, so it's easy to fool those detectives. Last night I went out and watched them. They hung around a couple of hours after my lights went out, then walked off together. I can dodge them any time and have all my nights free without their ever suspecting anything."

"Are you free tonight?"

"Yes. The time-switches are all set, and as long as I get back before daylight, so they can see me get up and go to work, it will be all right."

Brookings told him briefly of the failures to secure the solution and the plans, of the death of the three men sent to silence Shiro, and of all the other developments. DuQuesne listened, his face impassive.

"Well," he said as Brookings ceased. "I thought you would bull it, but not quite so badly. But there's no use whining now. I can't use my original plan of attack in force, as they are prepared and might be able to stand us off until the police could arrive."

He thought deeply for a time, then said, intensely:

"If I go into this thing, Brookings, I am in absolute command. Everything goes as I say. Understand?"

"Yes. It's up to you, now."

"All right, I think I've got it. Can you get me a Curtiss biplane in an hour, and a man about six feet tall who weighs about a hundred and sixty pounds? I want to drive the plane myself, and have the man, dressed in full leathers and hood, in the passenger's seat, shot so full of chloroform or dope that he will be completely unconscious for at least two hours."

"Easy. We can get you any kind of plane you want in an hour, and Perkins can find a man of that description who would be glad to have a dream at that price. But what's the idea?... Pardon me, I shouldn't have asked that," he added, as the saturnine chemist shot him a black look from beneath his heavy brows.

Well, within the hour, DuQuesne drove up to a private aviation field and found awaiting him a Curtiss biplane, whose attendant jumped into an automobile and sped away as he approached. He quickly donned a heavy leather suit, similar to the one Seaton always wore in the air, and drew the hood over his face. Then, after a searching look at the lean form of the unconscious man in the other seat, he was off, the plane climbing swiftly under his expert hand. He took a wide circle to the west and north.

Soon Shiro and the two guards, hearing the roar of an approaching airplane, looked out and saw what they supposed to be Crane's biplane coming down with terrific speed in an almost vertical nose-dive, as though the driver were in an extremity of haste. Flattening out just in time to avert destruction it taxied up the field almost to the house. The watchers saw a man recognizable as Seaton by his suit and his unmistakable physique stand up and wave both arms frantically, heard him shout hoarsely "... all of you ... out here," saw him point to Crane's apparently lifeless form and slump down in his seat. All three ran out to help the unconscious aviators, but just as they reached the machine there were three silenced reports and the three men fell to the ground. DuQuesne leaped lightly out of the machine and looked narrowly at the bodies at his feet. He saw that the two detectives were dead, but found with some chagrin that the Japanese still showed faint signs of life. He half drew his pistol to finish the job, but observing that the victim was probably fatally wounded he thrust it back into its holster and went on into the

house. Drawing on rubber gloves he rapidly blew the door off the safe with nitro-glycerin and took out everything it contained. He set aside a roll of blueprints, numerous notebooks, some money and other valuables, and a small vial of solution—but of the larger bottle there was no trace. He then ransacked the entire house, from cellar to attic, with no better success. So cleverly was the entrance to the vault concealed in the basement wall that he failed to discover it.

"I might have expected this of Crane," he thought, half aloud, "after all the warning that fool Brookings persisted in giving him. This is the natural result of his nonsense. The rest of the solution is probably in the safest safe-deposit vault in the United States. But I've got their plans and notes, and enough solution for the present. I'll get the rest of it when I want it—there's more than one way to kill any cat that ever lived!"

Returning to the machine, DuQuesne calmly stepped over the bodies of the detectives and the unconscious form of the dying Japanese, who was uttering an occasional groan. He started the engine and took his seat. There was an increasing roar as he opened the throttle, and soon he descended upon the field from which he had set out. He noted that there was a man in an automobile at some distance from the hangar, evidently waiting to take care of the plane and his still unconscious passenger. Rapidly resuming his ordinary clothing, he stepped into his automobile and was soon back in his own rooms, poring over the blueprints and notebooks.

Seaton and Crane both felt that something was wrong when they approached the landing field and saw that the landing-lights were not burning, as they always were kept lighted whenever the plane was abroad after dark. By the dim light of the old moon Crane made a bumpy landing and they sprang from their seats and hastened toward the house. As they neared it they heard a faint moan and turned toward the sound, Seaton whipping out his electric torch with one hand and his automatic pistol with the other. At the sight that met their eyes, however, he hastily replaced the weapon and

bent over Shiro, a touch assuring him that the other two were beyond the reach of help. Silently they picked up the injured man and carried him gently into his own room, barely glancing at the wrecked safe on the way. Seaton applied first-aid treatment to the ghastly wound in Shiro's head, which both men supposed to be certainly fatal, while Crane called a noted surgeon, asking him to come at once. He then telephoned the coroner, the police, and finally Prescott, with whom he held a long conversation.

Having done all in their power for the unfortunate man, they stood at his bedside, their anger all the more terrible for the fact that it was silent. Seaton stood with every muscle tense. He was seething with rage, his face purple and his eyes almost emitting sparks, his teeth clenched until the muscles of his jaws stood out in bands and lumps. His right hand, white-knuckled, gripped the butt of his pistol, while under his left the brass rail of the bed slowly bent under the intensity of his unconscious muscular effort. Crane stood still, apparently impassive, but with his face perfectly white and with every feature stern and cold as though cut from marble. Seaton was the first to speak.

"Mart," he gritted, his voice husky with fury, "a man who would leave another man alone to die after giving him that, ain't a man—he's a thing. If Shiro dies and we can ever find out who did it I'll shoot him with the biggest explosive charge I've got. No, I won't either, that'd be too sudden. I'll take him apart with my bare hands."

"We will find him, Dick," Crane replied in a level, deadly voice entirely unlike his usual tone. "That is one thing money can do. We will get him if money, influence, and detectives can do it."

The tension was relieved by the arrival of the surgeon and his two nurses, who set to work with the machine-like rapidity and precision of their highly-specialized craft. After a few minutes, the work completed, the surgeon turned to the two men who had been watching him so intently, with a smile upon his clean-shaven face.

"Merely a scalp wound, Mr. Crane," he stated. "He should recover consciousness in an hour or so." Then, breaking in upon Seaton's exclamation, "It looks much worse than it really is. The bullet

glanced off the skull instead of penetrating it, stunning him by the force of the blow. There are no indications that the brain is affected in any way, and while the affected area of the scalp is large, it is a clean wound and should heal rapidly. He will probably be up and around in a couple of days, and by the time his hair grows again, he will not be able to find a scar."

As he took his leave, the police and coroner arrived. After making a thorough investigation, in which they learned what had been stolen and shrewdly deduced the manner in which the robbery had been accomplished, they departed, taking with them the bodies. They were authorized by Crane to offer a reward of one million dollars for information leading to the arrest and conviction of the murderer. After everyone except the nurses had gone, Crane showed them the rooms they were to occupy while caring for the wounded man. As the surgeon had foretold, Shiro soon recovered consciousness. After telling his story he dropped into a deep sleep, and Seaton and Crane, after another telephonic conference with Prescott, retired for the rest of the night.

CHAPTER VI

The Object-Compass at Work

Prescott, after a sleepless night, joined Seaton and Crane at breakfast.

"What do you make of it, Mr. Prescott?" asked Crane. "Seaton here thinks it was DuQuesne, possibly acting for some foreign power, after our flying-machine to use in war. I think it was some big industrial concern after our power-plant. What is your opinion?"

"I haven't any," replied the great detective after a moment. "Either guess may be true, although I am almost positive that Dr. DuQuesne had nothing to do with it, either way. It was no ordinary burglary, that is certain from Shiro's story. It was done by someone who had

exact information of your movements and habits. He chose a time when you were away, probably not so much from fear of you as because it was only in your absence that he could succeed as he did in getting all the guards out at once where he could handle them. He was a man with one accomplice or who worked alone, and who was almost exactly Seaton's size and build. He was undoubtedly an expert, as he blew the safe and searched the whole house without leaving a finger-print or any other clue, however slight, that I can find—a thing I have never before seen done in all my experience."

"His size should help in locating him," declared Crane. "While there are undoubtedly thousands of men of Dick's six-feet-one and two-fifths, they are fairly well scattered, are they not?"

"Yes, they are, but his very size only makes it worse. I have gone over all the records I could, in the short time I have had, and can't find an expert of that class with anywhere near that description."

"How about the third guard, the one who escaped?" asked Seaton.

"He wasn't here. It was his afternoon off, you know, and he said that he wouldn't come back into this job on a bet—that he wasn't afraid of anything ordinary, but he didn't like the looks of things out here. That sounded fishy to me, and I fired him. He may have been the leak, of course, though I have always found him reliable before. If he did leak, he must have got a whale of a slice for it. He is under constant watch, and if we can ever get anything on him, I will nail him to the cross. But that doesn't help get this affair straightened out. I haven't given up, of course, there are lots of things not tried yet, but I must admit that temporarily, at least, I am up a stump."

"Well," remarked Seaton, "that million-dollar reward will bring him in, sure. No honor that ever existed among thieves, or even among free-lances of diplomacy, could stand that strain."

"I'm not so sure of that, Dick," said Crane. "If either one of our ideas is the right one, very few men would know enough about the affair to give pertinent information, and they probably would not live long enough to enjoy the reward very thoroughly. Even a million dollars fails in that case."

"I rather agree with Mr. Crane, Seaton. If it were an ordinary affair—and I am as sure it is not as the police are that it is—a reward of that size would get us our man within two days. As it is, I doubt very much that the reward will do us any good. I'm afraid that it will never be claimed."

"Wonder if the Secret Service could help us out? They'd be interested if it should turn out to be some foreign power."

"I took it up with the Chief himself, just after it happened last night. He doesn't think that it can be a foreign country. He has their agents pretty well spotted, and the only one that could fill the bill—you know a man with that description and with the cold nerve to do the job would be apt to be known—was in San Francisco, the time this job was pulled off."

"The more you talk, the more I am convinced that it was DuQuesne himself," declared Seaton, positively. "He is almost exactly my size and build, is the only man I know of who could do anything with the solution after he got it, and he has nerve enough to do anything."

"I would like to think it was DuQuesne," replied the detective, thoughtfully, "but I'm afraid we'll have to count him out of it entirely. He has been under the constant surveillance of my best men ever since you mentioned him. We have detectaphones in his rooms, wires on his telephone, and are watching him night and day. He never goes out except to work, never has any except unimportant telephone calls, and the instruments register only the occasional scratching of a match, the rustle of papers, and other noises of a man studying. He's innocent."

"That may be true," assented Seaton doubtfully, "but you want to remember that he knows more about electricity than the guy that invented it, and I'm not sure that he can't talk to a detectaphone and make it say anything he wants it to. Anyway, we can soon settle it. Yesterday I made a special trip down to the Bureau, with some notes as an excuse, to set this object-compass on him," taking one of the

small instruments from his pocket as he spoke. "I watched him a while last night, then fixed an alarm to wake me if the needle moved much, but it pointed steady all night. See! It's moving now. That means that he is going to work early, as usual. Now I'm morally certain that he's mixed up in this thing somewhere, and I'm not convinced that he isn't slipping one over on your men some way—he's a clever devil. I wonder if you wouldn't take this compass and watch him yourself tonight, just on general principles? Or let me do it. I'd be glad to. I say 'tonight' because if he did get the stuff here he didn't deliver it anywhere last night. It's just a chance, of course, but he may do it tonight."

After the compass had been explained to the detective he gladly consented to the plan, declaring that he would willingly spend the time just to watch such an unheard-of instrument work. After another hour of fruitless discussion Prescott took his leave, saying that he would mount an impregnable guard from that time on.

Late that evening Prescott joined the two men who were watching DuQuesne's house. They reported that all was perfectly quiet, as usual. The scientist was in his library, the instruments registering only the usual occasional faint sounds of a man absorbed in study. But after an hour of waiting, and while the microphones made a noise as of rustling papers, the needle of the compass moved. It dipped slowly toward the earth as though DuQuesne were descending into the cellar, but at the same time the shadow of his unmistakable profile was thrown upon the window shade as he apparently crossed the room.

"Can't you hear him walk?" demanded Prescott.

"No. He has heavy Turkish rugs all over the library, and he always walks very lightly, besides."

Prescott watched the needle in amazement as it dipped deeper and deeper, pointing down into the earth almost under his feet and then behind him, as though DuQuesne had walked beneath him. He did

not, could not, believe it. He was certain that something had gone wrong with the strange instrument in his hand, nevertheless he followed the pointing needle. It led him beside Park Road, down the hill, straight toward the long bridge which forms one entrance to Rock Creek Park. Though skeptical, Prescott took no chances, and as he approached the bridge he left the road and concealed himself behind a clump of trees, from which point of vantage he could see the ground beneath the bridge as well as the roadway. Soon the bridge trembled under the weight of a heavy automobile going toward the city at a high rate of speed. He saw DuQuesne, with a roll of papers under his arm, emerge from under the bridge just in time to leap aboard the automobile, which slowed down only enough to enable him to board it in safety. The detective noticed that the car was a Pierce-Arrow limousine—a car not common, even in Washington—and rushed out to get its number, but the license plates were so smeared with oil and dust that the numbers could not be read by the light of the tail lamp. Glancing at the compass in his hand he saw that the delicate needle was now pointing steadily at the fleeing car, and all doubts as to the power of the instrument were dispelled. He rejoined his men, informed them that DuQuesne had eluded them, and took one of them up the hill to a nearby garage. There he engaged a fast car and set out in pursuit, choosing the path for the chauffeur by means of the compass. His search ended at the residence of Brookings, the General Manager of the great World Steel Corporation. Here he dismissed the car and watched the house while his assistant went to bring out the fast motorcycle used by Prescott when high speed was desirable.

After four hours a small car bearing the license number of a distant state—which was found, by subsequent telegraphing, to be unknown to the authorities of that state—drove under the porte-cochère, and the hidden watcher saw DuQuesne, without the papers, step into it. Knowing now what to expect, Prescott drove his racing motorcycle at full speed out to the Park Road Bridge and concealed himself beneath the structure, in a position commanding a view of the concrete abutment through which the scientist must have come. Soon he heard a car slow down overhead, heard a few rapid footfalls, and saw the dark form of a large man outlined against the

gray face of the abutment. He saw the man lift his hand high above his head, and saw a black rectangle appear in the gray, engulf the man, and disappear. After a few minutes he approached the abutment and searched its face with the help of his flash-light. He finally succeeded in tracing the almost imperceptible crack which outlined the door, and the concealed button which DuQuesne had pressed to open it. He did not press the button, as it might be connected to an alarm. Deep in thought, he mounted his motorcycle and made his way to his home to get a few hours of sleep before reporting to Crane whom he was scheduled to see at breakfast next morning.

Both men were waiting for him when he appeared, and he noticed with pleasure that Shiro, with a heavily-bandaged head, was insisting that he was perfectly able to wait on the table instead of breakfasting in bed. He calmly proceeded to serve breakfast in spite of Crane's remonstrances, having ceremoniously ordered out of the kitchen the colored man who had been secured to take his place.

"Well, gentlemen," the detective began, "part of the mystery is straightened out. I was entirely wrong, and each of you were partly right. It was DuQuesne, in all probability. It is equally probable that a great company—in this case the World Steel Corporation—is backing him, though I don't believe there is a ghost of a show of ever being able to prove it in law. Your 'object-compass' did the trick."

He narrated all the events of the previous night.

"I'd like to send him to the chair for this job," said Seaton with rising anger. "We ought to shoot him anyway, damn him—I'm sorry duels have gone out of fashion, for I can't shoot him off-hand, the way things are now—I sure wish I could."

"No, you cannot shoot him," said Crane, thoughtfully, "and neither can I, worse luck. We are not in his class there. And you must not fight with him, either"—noting that Seaton's powerful hands had doubled into fists, the knuckles showing white through the tanned

skin—"though that would be a fight worth watching and I would like to see you give him the beating of his life. A little thing like a beating is not a fraction of what he deserves and it would show him that we have found him out. No, we must do it legally or let him entirely alone. You think there is no hope of proving it, Prescott?"

"Frankly, I see very little chance of it. There is always hope, of course, and if that bunch of pirates ever makes a slip, we'll be right there waiting to catch 'em. While I don't believe in holding out false encouragement, they've never slipped yet. I'll take my men off DuQuesne, now that we've linked him up with Steel. It doesn't make any difference, does it, whether he goes to them every night or only once a week?

"No."

"Then about all I can do is to get everything I can on that Steel crowd, and that is very much like trying to get blood out of a turnip. I intend to keep after them, of course, for I owe them something for killing two of my men here, as well as for other favors they have done me in the past, but don't expect too much. I have tackled them before, and so have police headquarters and even the Secret Service itself, under cover, and all that any of us has been able to get is an occasional small fish. We could never land the big fellows. In fact, we have never found the slightest material proof of what we are morally certain is the truth, that World Steel is back of a lot of deviltry all over the country. The little fellows who do the work either don't know anything or are afraid to tell. I'll see if I can find out what they are doing with the stuff they stole, but I'm not even sure of doing that. You can't plant instruments on that bunch—it would be like trying to stick a pin into a sleeping cat without waking him up. They undoubtedly have one of the best corps of detectives in the world. You haven't perfected an instrument which enables you to see into a closed room and hear what is going on there, have you?" And upon being assured that they had not, he took his leave.

"Optimistic cuss, ain't he?" remarked Seaton.

"He has cause to be, Dick. World Steel is a soulless corporation if there ever was one. They have the shrewdest lawyers in the country,

and they get away legally with things that are flagrantly illegal, such as freezing out competitors, stealing patents, and the like. Report has it that they do not stop at arson, treason, or murder to attain their ends, but as Prescott said, they never leave any legal proof behind them."

"Well, *we* should fret, anyway. Of course, a monopoly is what they're after, but they can't form one because they can't possibly get the rest of our solution. Even if they should get it, we can get more. It won't be as easy as this last batch was, since the X was undoubtedly present in some particular lot of platinum in extraordinary quantities, but now that I know exactly what to look for, I can find more. So they can't get their monopoly unless they kill us off...."

"Exactly. Go on, I see you are getting the idea. If we should both conveniently die, they could get the solution from the company, and have the monopoly, since no one else can handle it."

"But they couldn't get away with it, Mart—never in a thousand years, even if they wanted to. Of course I am small fry, but you are too big a man for even Steel to do away with. It can't be done."

"I am not so sure of that. Airplane accidents are numerous, and I am an aviator. Also, has it ever occurred to you that the heavy forging for the Skylark, ordered a while ago, are of steel?"

Seaton paused, dumbfounded, in the act of lighting his pipe.

"But thanks to your object-compass, we are warned." Crane continued, evenly. "Those forgings are going through the most complete set of tests known to the industry, and if they go into the Skylark at all it will be after I am thoroughly convinced that they will not give way on our first trip into space. But we can do nothing until the steel arrives, and with the guard Prescott has here now we are safe enough. Luckily, the enemy knows nothing of the object-compass or the X-plosive, and we must keep them in ignorance. Hereinafter, not even the guards get a look at anything we do."

"They sure don't. Let's get busy!"

DuQuesne and Brookings met in conference in a private room of the Perkins Café.

"What's the good word, Doctor?"

"So-so," replied the scientist. "The stuff is all they said it was, but we haven't enough of it to build much of a power-plant. We can't go ahead with it, anyway, as long as Seaton and Crane have nearly all their original solution."

"No, we can't. We must find a way of getting it. I see now that we should have done as you suggested, and taken it before they had warning and put it out of our reach."

"There's no use holding post-mortems. We've got to get it, some way, and everybody that knows anything about that new metal, how to get it or how to handle it, must die. At first, it would have been enough to kill Seaton. Now, however, there is no doubt that Crane knows all about it, and he probably has left complete instructions in case he gets killed in an accident—he's the kind that would. We will have to keep our eyes open and wipe out those instructions and anyone who has seen them. You see that, don't you?"

"Yes, I am afraid that is the only way out. We must have the monopoly, and anyone who might be able to interfere with it must be removed. How has your search for more X prospered?"

"About as well as I expected. We bought up all the platinum wastes we could get, and reworked all the metallic platinum and allied metals we could buy in the open market, and got less than a gram of X out of the whole lot. It's scarcer than radium. Seaton's finding so much of it at once was an accident, pure and simple—it couldn't happen once in a million years."

"Well, have you any suggestions as to how we can get that solution?"

"No. I haven't thought of anything but that very thing ever since I found that they had hidden it, and I can't yet see any good way of getting it. My forte is direct action and that fails in this case, since

no amount of force or torture could make Crane reveal the hiding-place of the solution. It's probably in the safest safe-deposit vault in the country. He wouldn't carry the key on him, probably wouldn't have it in the house. Killing Seaton or Crane, or both of them, is easy enough, but it probably wouldn't get us the solution, as I have no doubt that Crane has provided for everything."

"Probably he has. But if he should disappear the stuff would have to come to light, or the Seaton-Crane Company might start their power-plant. In that case, we probably could get it?"

"*Possibly*, you mean. That method is too slow to suit me, though. It would take months, perhaps years, and would be devilishly uncertain, to boot. They'll know something is in the wind, and the stuff will be surrounded by every safeguard they can think of. There must be some better way than that, but I haven't been able to think of it."

"Neither have I, but your phrase 'direct action' gives me an idea. You say that that method has failed. What do you think of trying indirect action in the shape of Perkins, who is indirection personified?"

"Bring him in. He may be able to figure out something."

Perkins was called in, and the main phases of the situation laid before him. The three men sat in silence for many minutes while the crafty strategist studied the problem. Finally he spoke.

"There's only one way, gentlemen. We must get a handle on either Seaton or Crane strong enough to make them give up their bottle of dope, their plans, and everything...."

"Handle!" interrupted DuQuesne. "You talk like a fool! You can't get anything on either of them."

"You misunderstand me, Doctor. You can get a handle of some kind on any living man. Not necessarily in his past, you understand—I know that anything like that is out of the question in this case—but

in his future. With some men it is money, with others power, with others fame, with others women or some woman, and so on down the list. What can we use here? Money is out of the question, so are power and fame, as they already have both in plain sight. It seems to me that women would be our best chance."

"Hah!" snorted the chemist. "Crane has been chased by all the women of three continents so long that he's womanproof. Seaton is worse—he's engaged, and wouldn't realize that a woman was on his trail, even if you could find a better looking one to work on him than the girl he's engaged to—which would be a hard job. Cleopatra herself couldn't swing that order."

"Engaged? That makes it simple as A B C."

"Simple? In the devil's name, how?"

"Easy as falling off a log. You have enough of the dope to build a space-car from those plans, haven't you?"

"Yes. What has that to do with the case?"

"It has everything to do with it. I would suggest that we build such a car and use it to carry off the girl. After we have her safe we could tell Seaton that she is marooned on some distant planet, and that she will be returned to earth only after all the solution, all notes, plans, and everything pertaining to the new metal are surrendered. That will bring him, and Crane will consent. Then, afterward, Dr. Seaton may go away indefinitely, and if desirable, Mr. Crane may accompany him."

"But suppose they try to fight?" asked Brookings.

Perkins slid down into his chair in deep thought, his pale eyes under half-closed lids darting here and there, his stubby fingers worrying his watch-chain restlessly.

"Who is the girl?" he asked at last.

"Dorothy Vaneman, the daughter of the lawyer. She's that auburn-haired beauty that the papers were so full of when she came out last year."

"Vaneman is a director in the Seaton-Crane Company. That makes it still better. If they show fight and follow us, that beautiful car we are making for them will collapse and they will be out of the way. Vaneman, as Seaton's prospective father-in-law and a member of his company, probably knows something about the secret. Maybe all of it. With his daughter in a space-car, supposedly out in space, and Seaton and Crane out of the way, Vaneman would listen to reason and let go of the solution, particularly as nobody knows much about it except Seaton and Crane."

"That strikes me as a perfectly feasible plan," said Brookings. "But you wouldn't really take her to another planet, would you? Why not use an automobile or an airplane, and tell Seaton that it was a space-car?"

"I wouldn't advise that. He might not believe it, and they might make a lot of trouble. It must be a real space-car even if we don't take her out of the city. To make it more impressive, you should take her in plain sight of Seaton—no, that would be too dangerous, as I have found out from the police that Seaton has a permit to carry arms, and I know that he is one of the fastest men with a pistol in the whole country. Do it in plain sight of her folks, say, or a crowd of people; being masked, of course, or dressed in an aviator's suit, with the hood and goggles on. Take her straight up out of sight, then hide her somewhere until Seaton listens to reason. I know that he *will* listen, but if he doesn't, you might let him see you start out to visit her. He'll be sure to follow you in their rotten car. As soon as he does that, he's our meat. But that raises the question of who is going to drive the car?"

"I am," replied DuQuesne. "I will need some help, though, as at least one man must stay with the girl while I bring the car back."

"We don't want to let anybody else in on this if we can help it," cautioned Brookings. "You could go along, couldn't you, Perkins?"

"Is it safe?"

"Absolutely," answered DuQuesne. "They have everything worked out to the queen's taste."

"That's all right, then. I'll take the trip. Also," turning to Brookings, "it will help in another little thing we are doing—the Spencer affair."

"Haven't you got that stuff away from her yet, after having had her locked up in that hell-hole for two months?" asked Brookings.

"No. She's stubborn as a mule. We've given her the third degree time after time, but it's no use."

"What's this?" asked DuQuesne. "Deviltry in the main office?"

"Yes. This Margaret Spencer claims that we swindled her father out of an invention and indirectly caused his death. She secured a position with us in search of evidence. She is an expert stenographer, and showed such ability that she was promoted until she became my secretary. Our detectives must have been asleep, as she made away with some photographs and drawings before they caught her. She has no real evidence, of course, but she might cause trouble with a jury, especially as she is one of the best-looking women in Washington. Perkins is holding her until she returns the stolen articles."

"Why can't you kill her off?"

"She cannot be disposed of until after we know where the stuff is, because she says, and Perkins believes, that the evidence will show up in her effects. We must do something about her soon, as the search for her is dying down and she will be given up for dead."

"What's the idea about her and the space-car?"

"If the car proves reliable we might actually take her out into space and give her the choice between telling and walking back. She has nerve enough here on earth to die before giving up, but I don't believe any human being would be game to go it alone on a strange world. She'd wilt."

"I believe you're right, Perkins. Your suggestions are the best way out. Don't you think so, Doctor?"

"Yes, I don't see how we can fail—we're sure to win, either way. You are prepared for trouble afterward, of course?"

"Certainly, but I don't think there will be much trouble. They can't possibly link the three of us together. They aren't wise to you, are they, Doctor?"

"Not a chance!" sneered DuQuesne. "They ran themselves ragged trying to get something on me, but they couldn't do it. They have given me up as a bad job. I am still as careful as ever, though—I am merely a pure scientist in the Bureau of Chemistry!"

All three laughed, and Perkins left the room. The talk then turned to the construction of the space-car. It was decided to rush the work on it, so that DuQuesne could familiarize himself with its operation, but not to take any steps in the actual abduction until such time as Seaton and Crane were nearly ready to take their first flight, so that they could pursue the abductors in case Seaton was still obdurate after a few days of his fiancée's absence. DuQuesne insisted that the car should mount a couple of heavy guns, to destroy the pursuing car if the faulty members should happen to hold together long enough to carry it out into space.

After a long discussion, in which every detail of the plan was carefully considered, the two men left the restaurant, by different exits.

CHAPTER VII

The Trial Voyage

The great steel forgings which were to form the framework of the Skylark finally arrived and were hauled into the testing shed. There, behind closed doors, Crane inspected every square inch of the massive members with a lens, but could find nothing wrong. Still unsatisfied, he fitted up an electrical testing apparatus in order to search out flaws which might be hidden beneath the surface. This

device revealed flaws in every piece, and after thoroughly testing each one and mapping out the imperfections he turned to Seaton with a grave face.

"Worse than useless, every one of them. They are barely strong enough to stand shipment. They figured that we would go slowly until we were well out of the atmosphere, then put on power—then something would give way and we would never come back."

"That's about the right dope, I guess. But now what'll we do? We can't cancel without letting them know we're onto them, and we certainly can't use this stuff."

"No, but we will go ahead and build this ship, anyway, so that they will think that we are going ahead with it. At the same time we will build another one, about four times this size, in absolute secrecy, and...."

"What d'you mean, absolute secrecy? How can you keep steel castings and forgings of that size secret from Steel?"

"I know a chap who owns and operates a small steel plant, so insignificant, relatively, that he has not yet been bought out or frozen out by Steel. I was able to do him a small favor once, and I am sure that he will be glad to return it. We will not be able to oversee the work, that is a drawback. We can get MacDougall to do it for us, however, and with him doing the work we can rest assured that there will be nothing off color. Even Steel couldn't buy *him*."

"MacDougall! The man who installed the Intercontinental plant? He wouldn't touch a little job like this with a pole!"

"I think he would. He and I are rather friendly, and after I tell him all about it he will be glad to take it. It means building the first interplanetary vessel, you know."

"Wouldn't Steel follow him up if he should go to work on a mysterious project? He's too big to hide."

"No. He will go camping—he often does. I have gone with him several times when we were completely out of touch with civilization

for two months at a time. Now, about the ship we want. Have you any ideas?"

"It will cost more than our entire capital."

"That is easily arranged. We do not care how much it costs."

Seaton began to object to drawing so heavily upon the resources of his friend, but was promptly silenced.

"I told you when we started," Crane said flatly, "that your solution and your idea are worth far more than half a million. In fact, they are worth more than everything I have. No more talk of the money end of it, Dick."

"All right. We'll build a regular go-getter. Four times the size—she'll be a bear-cat, Mart. I'm glad this one is on the fritz. She'll carry a two-hundred-pound bar—Zowie! Watch our smoke! And say, why wouldn't it be a good idea to build an attractor—a thing like an object-compass, but mounting a ten-pound bar instead of a needle, so that if they chase us in space we can reach out and grab 'em? We might mount a machine-gun in each quadrant, shooting X-plosive bullets, through pressure gaskets in the walls. We should have something for defense—I don't like the possibility of having that gang of pirates after us, and nothing to fight back with except thought-waves."

"Right. We will do both those things. But we should make the power-plant big enough to avert any possible contingency—say four hundred pounds—and we should have everything in duplicate, from power-plant to push-buttons."

"I don't think that's necessary, Mart. Don't you think that's carrying caution to extremes?"

"Possibly—but I would rather be a live coward than a dead hero, wouldn't you?"

"You chirped it, old scout, I sure would. I never did like the looks of that old guy with the scythe, and I would hate to let DuQuesne feel that he had slipped something over on me at my own game. Besides,

I've developed a lot of caution myself, lately. Double she is, with a skin of four-foot Norwegian armor. Let's get busy!"

They made the necessary alteration in the plans, and in a few days work was begun upon the huge steel shell in the little mountain steel-plant. The work was done under the constant supervision of the great MacDougall, by men who had been in his employ for years and who were all above suspicion. While it was being built Seaton and Crane employed a force of men and went ahead with the construction of the space-car in the testing shed. While they did not openly slight the work nearly all their time was spent in the house, perfecting the many essential things which were to go into the real Skylark. There was the attractor, for which they had to perfect a special sighting apparatus so that it could act in any direction, and yet would not focus upon the ship itself nor anything it contained. There were many other things.

It was in this work that the strikingly different temperaments and abilities of the two men were most clearly revealed. Seaton strode up and down the room, puffing great volumes of smoke from his hot and reeking briar, suggesting methods and ideas, his keen mind finding the way over, around, or through the apparently insuperable obstacles which beset their path. Crane, seated calmly at the drafting-table, occasionally inhaling a mouthful of smoke from one of his specially-made cigarettes, mercilessly tore Seaton's suggestions to shreds—pointing out their weaknesses, proving his points with his cold, incisive reasoning and his slide-rule calculations of factors, stresses, and strains. Seaton in turn would find a remedy for every defect, and finally, the idea complete and perfect, Crane would impale it upon the point of his drafting pencil and spread it in every detail upon the paper before him, while Seaton's active mind leaped to the next problem.

Not being vitally interested in the thing being built in the shed, they did not know that to the flawed members were being attached faulty plates, by imperfect welding. Even if they had been interested they

could not have found the poor workmanship by any ordinary inspection, for it was being done by a picked crew of experts picked by Perkins. But to make things even, Perkins' crew did not know that the peculiar instruments installed by Seaton and Crane, of which their foreman took many photographs, were not real instruments, and were made only nearly enough like them to pass inspection. They were utterly useless, in design and function far different from the real instruments intended for the Skylark.

Finally, the last dummy instrument was installed in the worthless space-car, which the friends referred to between themselves as "The Cripple," a name which Seaton soon changed to "Old Crip." The construction crew was dismissed after Crane had let the foreman overhear a talk between Seaton and himself in which they decided not to start for a few days as they had some final experiments to make. Prescott reported that Steel had relaxed its vigilance and was apparently waiting for the first flight. About the same time word was received from MacDougall that the real Skylark was ready for the finishing touches. A huge triplane descended upon Crane Field and was loaded to its capacity with strange looking equipment. When it left Seaton and Crane went with it, "to make the final tests before the first flight," leaving a heavy guard over the house and the testing shed.

A few nights later, in inky blackness, a huge shape descended rapidly in front of the shed, whose ponderous doors opened to receive it and closed quickly after it. The Skylark moved lightly and easily as a wafted feather, betraying its thousands of tons of weight only by the hole it made in the hard-beaten earth of the floor as it settled to rest. Opening one of the heavy doors, Seaton and Crane sprang out into the darkness.

Dorothy and her father, who had been informed that the Skylark was to be brought home that night, were waiting. Seaton caught up his sweetheart in one mighty arm and extended his hand past her to Vaneman, who seized it in both his own. Upon the young man's face was the look of a victorious king returning from conquest. For a few minutes disconnected exclamations were all that any of the party

could utter. Then Seaton, loosening slightly his bear's hold upon Dorothy, spoke.

"She flies!" he cried exultantly. "She flies, dearest, like a ray of light for speed and like a bit of thistledown for lightness. We've been around the moon!"

"Around the moon!" cried the two amazed visitors. "So soon?" asked Vaneman. "When did you start?"

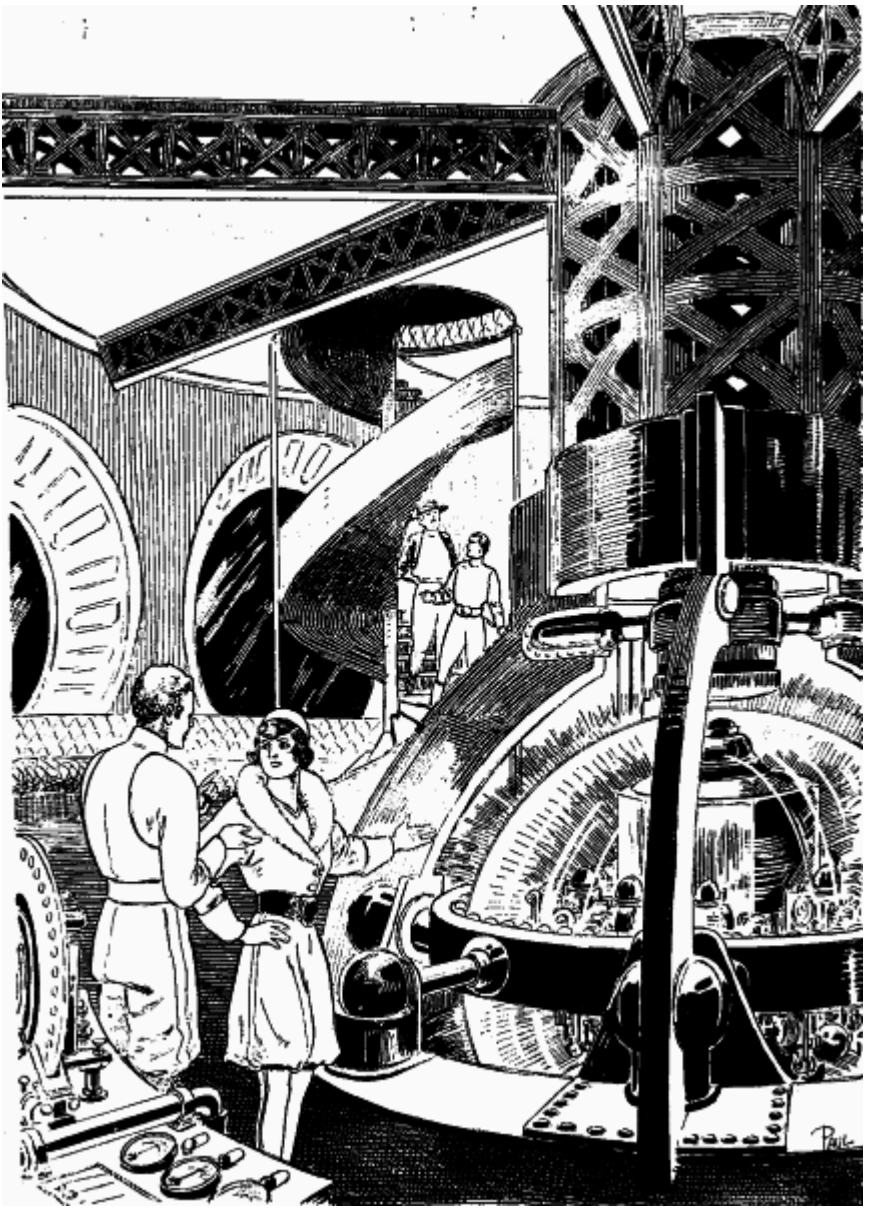
"Almost an hour ago," replied Crane readily; he had already taken out his watch. His voice was calm, his face quiet, but to those who knew him best a deeper resonance in his voice and a deeper blue sparkle in his eyes betrayed his emotion. Both inventors were moved more than they could have told by their achievement, by the complete success of the great space-cruiser upon which they had labored for months with all the power of their marvelous intellects. Seaton stood now at the summit of his pride. No recognition by the masses, no applause by the multitudes, no praise even from the upper ten of his own profession could equal for him the silent adulation of the two before him. Dorothy's exquisite face was glorified as she looked at her lover. Her eyes wonderful as they told him how high he stood above all others in her world, how much she loved him. Seeing that look; that sweet face, more beautiful than ever in this, his hour of triumph; that perfect, adorable body, Seaton forgot the others and a more profound exaltation than that brought by his flight filled his being—humble thankfulness that he was the man to receive the untold treasure of her great giving.

"Every bit of mechanism we had occasion to use worked perfectly," Crane stated proudly. "We did not find it necessary to change any of our apparatus and we hope to make a longer flight soon. The hour we took on this trip might easily have been only a few minutes, for the Lark did not even begin to pick up speed."

Shiro looked at Crane with an air of utter devotion and bowed until his head approached the floor.

"Sir," he said in his stilted English. "Honorable Skylark shall be marvelous wonder. If permitting, I shall luxuriate in preparing suitable refreshment."

The permission granted, he trotted away into the house, and the travelers invited their visitors to inspect the new craft. Crane and the older man climbed through the circular doorway, which was at an elevation of several feet above the ground. Seaton and Dorothy exchanged a brief but enthusiastic caress before he lifted her lightly up to the opening and followed her up a short flight of stairs. Although she knew what to expect, from her lover's descriptions and from her own knowledge of "Old Crip," which she had seen many times, she caught her breath in amazement as she stood up and looked about the brilliantly-lighted interior of the great sky-rover. It was a sight such as had never before been seen upon earth.



In the exact center of the huge shell was a spherical network of enormous steel beams. Inside this structure could be seen a similar network which, mounted upon universal bearings, was free to revolve in any direction.

She saw a spherical shell of hardened steel armor-plate, fully forty feet in diameter; though its true shape was not readily apparent

from the inside, as it was divided into several compartments by horizontal floors or decks. In the exact center of the huge shell was a spherical network of enormous steel beams. Inside this structure could be seen a similar network which, mounted upon universal bearings, was free to revolve in any direction. This inner network was filled with machinery, surrounding a shining copper cylinder. From the outer network radiated six mighty supporting columns. These, branching as they neared the hull of the vessel, supported the power-plant and steering apparatus in the center and so strengthened the shell that the whole structure was nearly as strong as a solid steel ball. She noticed that the floor, perhaps eight feet below the center, was heavily upholstered in leather and did not seem solid; and that the same was true of the dozen or more seats—she could not call them chairs—which were built in various places. She gazed with interest at the two instrument boards, upon which flashed tiny lights and the highly-polished plate glass, condensite, and metal of many instruments, the use of which she could not guess.

After a few minutes of silence both visitors began to ask questions, and Seaton showed them the principal features of the novel craft. Crane accompanied them in silence, enjoying their pleasure, glorying in the mighty vessel. Seaton called attention to the great size and strength of the lateral supporting columns, one of which was immediately above their heads, and then led them over to the vertical column which pierced the middle of the floor. Enormous as the lateral had seemed, it appeared puny in comparison with this monster of fabricated steel. Seaton explained that the two verticals were many times stronger than the four laterals, as the center of gravity of the ship had been made lower than its geometrical center, so that the apparent motion of the vessel and therefore the power of the bar, would usually be merely vertical. Resting one hand caressingly upon the huge column, he exultantly explained that these members were "the last word in strength, made up of many separate I-beams and angles of the strongest known special steel, latticed and braced until no conceivable force could make them yield a millimeter."

"But why such strength?" asked the lawyer doubtfully. "This column alone would hold up Brooklyn Bridge."

"To hold down the power-plant, so that the bar won't tear through the ship when we cut her loose," replied Seaton. "Have you any idea how fast this bird can fly?"

"Well, I have heard you speak of traveling with the velocity of light, but that is overdrawn, isn't it?"

"Not very much. Our figures show that with this four-hundred-pound bar"—pointing to the copper cylinder in the exact center of the inner sphere—"we could develop not only the velocity of light, but an acceleration equal to that velocity, were it not for the increase in mass at high velocities, as shown by Einstein and others. We can't go very fast near the earth, of course, as the friction of the air would melt the whole works in a few minutes. Until we get out of the atmosphere our speed will be limited by the ability of steel to withstand melting by the friction of the air to somewhere in the neighborhood of four or five thousand miles per hour, but out in space we can develop any speed we wish, up to that of light as a limit."

"I studied physics a little in my youth. Wouldn't the mere force of such an acceleration as you mention flatten you on the floor and hold you there? And any sudden jar would certainly kill you."

"There can't be any sudden jar. This is a special floor, you notice. It is mounted on long, extremely heavy springs, to take up any possible jar. Also, whenever we are putting on power we won't try to stand up, our legs would crimple up like strings. We will ride securely strapped into those special seats, which are mounted the same as the floor, only a whole lot more so. As to the acceleration...."

"That word means picking up speed, doesn't it?" interrupted Dorothy.

"The rate of picking up speed," corrected Seaton. "That is, if you were going forty miles per hour one minute, and fifty the next minute, your acceleration would be ten miles per hour per minute. See? It's acceleration that makes you feel funny when you start up or down in an elevator."

"Then riding in this thing will be like starting up in an elevator so that your heart sinks into your boots and you can't breathe?"

"Yes, only worse. We will pick up speed faster and keep on doing it...."

"Seriously," interrupted the lawyer, "do you think that the human body can stand any such acceleration as that?"

"I don't know. We are going to find out, by starting out slowly and increasing our acceleration to as much as we can stand."

"I see," Vaneman replied. "But how are you going to steer her? How do you keep permanent reference points, since there are no directions in space?"

"That was our hardest problem," explained Seaton, "but Martin solved it perfectly. See the power-plant up there? Notice those big supporting rings and bearings? Well, the power-plant is entirely separate from the ship, as it is inside that inner sphere, about which the outer sphere and the ship itself are free to revolve in any direction. No matter how much the ship rolls and pitches, as she is bound to do every time we come near enough to any star or planet to be influenced by its gravitation, the bar stays where it is pointed. Those six big jackets in the outer sphere, on the six sides of the bar, cover six pairs of gyroscope wheels, weighing several tons each, turning at a terrific speed in a vacuum. The gyroscopes keep the whole outer sphere in exactly the same position as long as they are kept turning, and afford us not only permanent planes of reference, but also a solid foundation in those planes which can be used in pointing the bar. The bar can be turned instantly to any direction whatever by special electrical instruments on the boards. You see, the outer sphere stays immovably fixed in that position, with the bar

at liberty to turn in any direction inside it, and the ship at liberty to do the same thing outside it.

"Now we will show you where we sleep," Seaton continued. "We have eight rooms, four below and four above," leading the way to a narrow, steep steel stairway and down into a very narrow hall, from either side of which two doors opened. "This is my room, the adjoining one is Mart's. Shiro sleeps across the hall. The rest of the rooms are for our guests on future trips."

Sliding back the door, he switched on the light and revealed a small but fully-appointed bedroom, completely furnished with everything necessary, yet everything condensed into the least possible space. The floor, like the one above, was of cushioned leather supported by springs. The bed was a modification of the special seats already referred to. Opening another sliding door, he showed them an equally complete and equally compact bathroom.

"You see, we have all the comforts of home. This bathroom, however, is practical only when we have some force downward, either gravitation or our own acceleration. The same reasoning accounts for the hand-rails you see everywhere on board. Drifting in space, you know, there is no weight, and you can't walk; you must pull yourself around. If you tried to take a step you would bounce up and hit the ceiling, and stay there. That is why the ceilings are so well padded. And if you tried to wash your face you would throw water all over the place, and it would float around in the air instead of falling to the floor. As long as we can walk we can use the bathroom—if I should want to wash my face while we are drifting, I just press this button here, and the pilot will put on enough acceleration to make the correct use of water possible. There are a lot of surprising things about a trip into space."

"I don't doubt it a bit, and I'm simply wild to go for a ride with you. When will you take me, Dicky?" asked Dorothy eagerly.

"Very soon, Dottie. As soon as we get her in perfect running condition. You shall be the first to ride with us, I promise you."

"Where do you cook and eat? How do you see out? How about the air and water supply? How do you keep warm, or cool, as the case may be?" asked the girl's father, as though he were cross-examining a witness.

"Shiro has a galley on the main floor, and tables fold up into the wall of the main compartment. The passengers see out by sliding back steel panels, which normally cover the windows. The pilot can see in any direction from his seat at the instrument-board, by means of special instruments, something like periscopes. The windows are made of optical glass similar to that used in the largest telescopes. They are nearly as thick as the hull and have a compressive resistance almost equal to that of armor steel. Although so thick, they are crystal clear, and a speck of dust on the outer surface is easily seen. We have water enough in tanks to last us three months, or indefinitely if we should have to be careful, as we can automatically distill and purify all our waste water, recovering absolutely pure H_2O. We have compressed air, also in tanks, but we need very little, as the air is constantly being purified. Also, we have oxygen-generating apparatus aboard, in case we should run short. As to keeping warm, we have electric heating coils, run by the practically inexhaustible power of a small metal bar. If we get too near the sun and get too warm, we have a refrigerating machine to cool us off. Anything else?"

"You'd better give up, Dad," laughingly advised his daughter. "You've thought of everything, haven't you, Dick?"

"Mart has, I think. This is all his doing, you know. I wouldn't have thought of a tenth of it, myself."

"I must remind you young folks," said the older man, glancing at his watch, "that it is very late and high time for Dottie and me to be going home. We would like to stay and see the rest of it, but you know we must be away from here before daylight."

As they went into the house Vaneman asked:

"What does the other side of the moon look like? I have always been curious about it."

"We were not able to see much," replied Crane "It was too dark and we did not take the time to explore it, but from what we could see by means of our searchlights it is very much like this side—the most barren and desolate place imaginable. After we go to Mars, we intend to explore the moon thoroughly."

"Mars, then, is your first goal? When do you intend to start?"

"We haven't decided definitely. Probably in a day or two. Everything is ready now."

As the Vanemans had come out in the street car, in order to attract as little attention as possible, Seaton volunteered to take them home in one of Crane's cars. As they bade Crane goodnight after enjoying Shiro's "suitable refreshment" the lawyer took the chauffeur's seat, motioning his daughter and Seaton into the closed body of the car. As soon as they had started Dorothy turned in the embrace of her lover's arm.

"Dick," she said fiercely. "I would have been worried sick if I had known that you were way off there."

"I knew it, sweetheart. That's why I didn't tell you we were going. We both knew the Skylark was perfectly safe, but I knew that you would worry about our first trip. Now that we have been to the moon you won't be uneasy when we go to Mars, will you, dear?"

"I can't help it, boy. I will be afraid that something terrible has happened, every minute. Won't you take me with you? Then, if anything happens, it will happen to both of us, and that is as it should be. You know that I wouldn't want to keep on living if anything *should* happen to you."

He put both arms around her as his reply, and pressed his cheek to hers.

"Dorothy sweetheart, I know exactly how you feel. I feel the same way myself. I'm awfully sorry, dear, but I can't do it. I know the

machine is safe, but I've got to prove it to everybody else before I take you on a long trip with me. Your father will agree with me that you ought not to go, on the first trip or two, anyway. And besides, what would Madam Grundy say?"

"Well, there *is* a way...." she began, and he felt her face turn hot.

His arms tightened around her and his breath came fast.

"I know it, sweetheart, and I would like nothing better in the world than to be married today and take our honeymoon in the Skylark, but I can't do it. After we come back from the first long trip we will be married just as soon as you say ready, and after that we will always be together wherever I go. But I can't take even the millionth part of a chance with anything as valuable as you are—you see that, don't you, Dottie?"

"I suppose so," she returned disconsolately, "but you'll make it a short trip, for my sake? I know I won't rest a minute until you get back."

"I promise you that we won't be gone more than four days. Then for the greatest honeymoon that ever was," and they clung together in the dark body of the car, each busy with solemn and beautiful thoughts of the happiness to come.

They soon reached their destination. As they entered the house Dorothy made one more attempt.

"Dad, Dick is just too perfectly mean. He says he won't take me on the first trip. If you were going out there wouldn't mother want to go along too?"

After listening to Seaton he gave his decision.

"Dick is right, Kitten. He must make the long trip first. Then, after the machine is proved reliable, you may go with him. I can think of no better way of spending a honeymoon—it will be a new one, at least. And you needn't worry about the boys getting back safely. I might not trust either of them alone, but together they are

invincible. Good-night, children. I wish you success, Dick," as he turned away.

Seaton took a lover's leave of Dorothy, and went into the lawyer's study, taking an envelope from his pocket.

"Mr. Vaneman," he said in a low voice, "we think the Steel crowd is still camping on our trail. We are ready for them, with a lot of stuff that they never heard of, but in case anything goes wrong, Martin has written between the lines of this legal form, in invisible ink A-36, exactly how to get possession of all our notes and plans, so that the company can go ahead with everything. With those directions any chemist can find and use the stuff safely. Please put this envelope in the safest place you can think of, and then forget it unless they get both Crane and me. There's about one chance in a million of their doing that, but Mart doesn't gamble on even that chance."

"He is right, Dick. I believe that you can outwit them in any situation, but I will keep this paper where no one except myself can ever see it, nevertheless. Good-night, son, and good luck."

"The same to you, sir, and thank you. Good-night."

CHAPTER VIII

Indirect Action

The author of this story, being a chemist of high standing and an excellent mathematician, gives us a rare gem

The afternoon following the homecoming of the Skylark, Seaton and Dorothy returned from a long horseback ride in the park. After Seaton had mounted his motorcycle Dorothy turned toward a bench in the shade of an old elm to watch a game of tennis on the court next door. Scarcely had she seated herself when a great copper-plated ball

in this interplanetary tale. For one thing, he suggests an interesting use of the action of acceleration. In this instalment it is made to take the place of gravity when the interplanetary vehicle is out in open space. In order to get the gravity effect, a positive or negative acceleration could be given out.

This instalment retains its easy flow of language and continues to develop surprise episodes with a remarkable degree of realism.

alighted upon the lawn in front of her. A heavy steel door snapped open and a powerful figure clad in aviator's leather, the face completely covered by the hood, leaped out. She jumped to her feet with a cry of joyful surprise, thinking it was Seaton—a cry which died suddenly as she realized that Seaton had just left her and that this vessel was far too small to be the Skylark. She turned in flight, but the stranger caught her in three strides. She found herself helpless in a pair of arms equal in strength to Seaton's own. Picking her up lightly as a baby, DuQuesne carried her over to the space-car. Shriek after shriek rang out as she found that her utmost struggles were of no avail against the giant strength of her captor, that her fiercely-driven nails glanced harmlessly off the heavy glass and leather of his hood, and that her teeth were equally ineffective against his suit.

With the girl in his arms DuQuesne stepped into the vessel, and as the door clanged shut behind them Dorothy caught a glimpse of another woman, tied hand and foot in one of the side seats of the car.

"Tie her feet, Perkins," DuQuesne ordered brusquely, holding her around the body so that her feet extended straight out in front of him. "She's a wildcat."

As Perkins threw one end of a small rope around her ankles Dorothy doubled up her knees, drawing her feet as far away from him as possible. As he incautiously approached, she kicked out viciously,

with all the force of her muscular young body behind her heavy riding-boots.

The sharp heel of one small boot struck Perkins squarely in the pit of the stomach—a true "solar-plexus" blow—and completely knocked out, he staggered back against the instrument-board. His out-flung arm pushed the speed lever clear out to its last notch, throwing the entire current of the batteries through the bar, which was pointed straight up, as it had been when they made their landing, and closing the switch which threw on the power of the repelling outer coating. There was a creak of the mighty steel fabric, stressed almost to its limit as the vessel darted upward with its stupendous velocity, and only the carefully-planned spring-and-cushion floor saved their lives as they were thrown flat and held there by the awful force of their acceleration as the space-car tore through the thin layer of the earth's atmosphere. So terrific was their speed, that the friction of the air did not have time to set them afire—they were through it and into the perfect vacuum of interstellar space before the thick steel hull was even warmed through. Dorothy lay flat upon her back, just as she had fallen, unable even to move her arms, gaining each breath only by a terrible effort. Perkins was a huddled heap under the instrument-board. The other captive, Brookings' ex-secretary, was in somewhat better case, as her bonds had snapped like string and she was lying at full length in one of the side-seats—forced into that position and held there, as the design of the seats was adapted for the most comfortable position possible under such conditions. She, like Dorothy, was gasping for breath, her straining muscles barely able to force air into her lungs because of the paralyzing weight of her chest.

DuQuesne alone was able to move, and it required all of his Herculean strength to creep and crawl, snake-like, toward the instrument-board. Finally attaining his goal, he summoned all his strength to grasp, not the controlling lever, which he knew was beyond his reach, but a cut-out switch only a couple of feet above his head. With a series of convulsive movements he fought his way up, first until he was crouching on his elbows and knees, and then into a squatting position. Placing his left hand under his right, he made a

last supreme effort. Perspiration streamed from him, his mighty muscles stood out in ridges visible even under the heavy leather of his coat, his lips parted in a snarl over his locked teeth as he threw every ounce of his wonderful body into an effort to force his right hand up to the switch. His hand approached it slowly—closed over it and pulled it out.

The result was startling. With the mighty power instantly cut off, and with not even the ordinary force of gravitation to counteract the force DuQuesne was exerting, his own muscular effort hurled him up toward the center of the car and against the instrument-board. The switch, still in his grasp, was again closed. His shoulder crashed against the levers which controlled the direction of the bar, swinging it through a wide arc. As the ship darted off in the new direction with all its old acceleration, he was hurled against the instrument board, tearing one end loose from its supports and falling unconscious to the floor on the other side. After a time, which seemed like an eternity, Dorothy and the other girl felt their senses slowly leave them.

With four unconscious passengers, the space-car hurtled through empty space, its already inconceivable velocity being augmented every second by a quantity bringing its velocity near to that of light, driven onward by the incredible power of the disintegrating copper bar.

Seaton had gone only a short distance from his sweetheart's home when over the purring of his engine he thought he heard Dorothy's voice raised in a scream. He did not wait to make sure, but whirled his machine about and the purring changed instantly to a staccato roar as he threw open the throttle and advanced the spark. Gravel flew from beneath his skidding wheels as he negotiated the turn into the Vaneman grounds at suicidal speed. But with all his haste he arrived upon the scene just in time to see the door of the space-car close. Before he could reach it the vessel disappeared, with nothing to mark its departure save a violent whirl of grass and sod, uprooted

and carried far into the air by the vacuum of its wake. To the excited tennis-players and the screaming mother of the abducted girl it seemed as though the great metal ball had vanished utterly—only Seaton, knowing what to expect, saw the line it made in the air and saw for an instant a minute dot in the sky before it disappeared.

Interrupting the clamor of the young people, each of whom was trying to tell him what had happened, he spoke to Mrs. Vaneman.

"Mother, Dottie's all right," he said rapidly but gently. "Steel's got her, but they won't keep her long. Don't worry, we'll get her. It may take a week or it may take a year, but we'll bring her back," and leaping upon his motorcycle, he shattered all the speed laws on his way to Crane's house.

"Mart!" he yelled, rushing into the shop, "they've got Dottie, in a bus made from our plans. Let's go!" as he started on a run for the testing shed.

"Wait a minute!" crisply shouted Crane. "Don't go off half-cocked. What is your plan?"

"Plan, hell!" barked the enraged chemist. "Chase 'em!"

"Which way did they go, and when?"

"Straight up, full power, twenty minutes ago."

"Too long ago. Straight up has changed its direction several degrees since then. They may have covered a million miles, or they may have come back and landed next door. Sit down and think—we need all your brains now."

Regaining his self-possession as the wisdom of his friend's advice came home to him, Seaton sat down and pulled out his pipe. There was a tense silence for an instant. Then he leaped to his feet and darted into his room, returning with an object-compass whose needle pointed upward.

"DuQuesne did it," he cried exultantly. "This baby is still looking right at him. Now let's go—make it snappy!"

"Not yet. We should find out how far away they are; that may give us an idea."

Suiting action to word, he took up his stopwatch and set the needle swinging. They watched it with strained faces as second after second went by and it still continued to swing. When it had come to rest Crane read his watch and made a rapid calculation.

"About three hundred and fifty million miles," he stated. "Clear out of our solar system already, and from the distance covered he must have had a constant acceleration so as to approximate the velocity of light, and he is still going with full...."

"But nothing can possibly go that fast, Mart, it's impossible. How about Einstein's theory?"

"That is a theory, this measurement of distance is a fact, as you know from our tests."

"That's right. Another good theory gone to pot. But how do you account for his distance? D'you suppose he's lost control?"

"He must have. I do not believe that he would willingly stand that acceleration, nor that he would have gone that far of his own accord. Do you?"

"I sure don't. We don't know how big a bar they are carrying, so we can't estimate how long it is going to take us to catch them. But let's not waste any more time, Mart. For Cat's sake, let's get busy!"

"We have only those four bars, Dick—two for each unit. Do you think that will be enough? Think of how far we may have to go, what we may possibly get into, and what it will mean to Dottie if we fail for lack of power."

Seaton, though furiously eager to be off, paused at this new idea, and half-regretfully he replied:

"We are so far behind them already that I guess a few hours more won't make much difference. It sure would be disastrous to get out near one of the fixed stars and have our power quit. I guess you're right, we'd better get a couple more—make it four, then we'll have

enough to chase them half our lives. We'd better load up on grub and X-plosive ammunition, too."

While Crane and Shiro carried additional provisions and boxes of cartridges into the "Skylark," Seaton once more mounted his motorcycle and sped across the city to the brass foundry. The manager of the plant took his order, but blandly informed him that there was not that much copper in the city, that it would be a week or ten days before the order could be filled. Seaton suggested that they melt up some copper cable and other goods already manufactured, offering ten times their value, but the manager was obdurate, saying that he could not violate the rule of priority of orders. Seaton then went to other places, endeavoring to buy scrap copper, trolley wire, electric cable, anything made of the ruddy metal, but found none for sale in quantities large enough to be of any use. After several hours of fruitless search, he returned home in a towering rage and explained to Crane, in lurid language, his failure to secure the copper. The latter was unmoved.

"After you left, it occurred to me that you might not get any. You see, Steel is still watching us."

Fire shot from Seaton's eyes.

"I'm going to clean up that bunch," he gritted through his teeth as he started straight for the door.

"Not yet, Dick," Crane remonstrated. "We can go down to Wilson's in a few minutes, and I know we can get it there if he has it. The "Skylark" is all ready to travel."

No more words were needed. They hurried into the space-car and soon were standing in the office of the plant in which the vessel had been built. When they had made their wants known, the iron-master shook his head.

"I'm sorry, Crane, but I have only a few pounds of copper in the shop, and we have no suitable furnace."

Seaton broke out violently at this, but Crane interrupted him, explaining their inability to get the metal anywhere else and the urgency of their need. When he had finished, Wilson brought his fist down upon his desk.

"I'll get it if I have to melt up our dynamos," he roared. "We'll have to rig a crucible, but we'll have your bars out just as soon as the whole force of this damned scrap-heap can make 'em!"

Calling in his foreman, he bellowed orders, and while automobiles scoured the nearby towns for scrap copper, the crucible and molds were made ready.

Nearly two days passed before the gleaming copper cylinders were finished. During this time Crane added to their already complete equipment every article he could conceive of their having any use for, while Seaton raged up and down the plant in a black fury of impatience. Just before the bars were ready, they made another reading on the object-compass. Their faces grew tense and drawn and their hearts turned sick as second followed second and minute followed minute and the needle still oscillated. Finally, however, it came to rest, and Seaton's voice almost failed him as he read his figures.

"Two hundred and thirty-five light-years, Mart. They're lost, and still going. Good-bye, old scout," holding out his hand, "Tell Vaneman that I'll bring her back or else stay out there myself."

"You must be crazy, Dick. You know I am going."

"Why? No use in both of us taking such a chance. If Dottie's gone, of course I want to go too, but you don't."

"Nonsense, Dick. Of course this is somewhat farther than we had planned on going for our maiden voyage, but where is the difference? It is just as safe to go a thousand light-years as only one, and we have power and food for any contingency. There is no more danger in this trip than there is in one to Mars. At all events, I am going whether you want me to or not, so save your breath."

"You lie like a thief, Mart—you know what we are up against as well as I do. But if you insist on coming along, I'm sure glad to have you."

As their hands met in a crushing grip, the bars were brought up and loaded into the carriers. Waving good-bye to Wilson, they closed the massive door and took their positions. Seaton adjusted the bar parallel with the needle of the object-compass, turned on the coil, and advanced the speed-lever until Crane, reading the pyro-meters, warned him to slow down, as the shell was heating. Free of the earth's atmosphere, he slowly advanced the lever, one notch at a time, until he could no longer support the increasing weight of his hand, but had to draw out the rolling support designed for that emergency. He pushed the lever a few notches farther, and felt himself forced down violently into the seat. He was now lying at full length, the seat having automatically moved upward so that his hand still controlled the lever. Still he kept putting on more power, until the indicator showed that more than three-quarters of the power was in operation and he felt that he could stand but little more.

"How are you making it, Mart?" he asked, talking with difficulty because of the great weight of his tongue and jaws.

"All right so far," came the response, in a hesitating, almost stammering voice, "but I do not know how much more I can take. If you can stand it, go ahead."

"This is enough for awhile, until we get used to it. Any time you want to rest, tell me and I'll cut her down."

"Keep her at this for four or five hours. Then cut down until we can walk, so that we can eat and take another reading on distance. Remember that it will take as long to stop as it does to get up speed, and that we must be careful not to ram them. There would be nothing left of either car."

"All right. Talking's too darn much work, I'll talk to you again when we ease down. I sure am glad we're on our way at last."

CHAPTER IX

Lost In Space

For forty-eight hours the uncontrolled atomic motor dragged the masterless vessel with its four unconscious passengers through the illimitable reaches of empty space, with an awful and constantly increasing velocity. When only a few traces of copper remained in the power-plant, the acceleration began to decrease and the powerful springs began to restore the floor and the seats to their normal positions. The last particle of copper having been transformed into energy, the speed of the vessel became constant. Apparently motionless to those inside it, it was in reality traversing space with a velocity thousands of times greater than that of light. As the force which had been holding them down was relaxed, the lungs, which had been able to secure only air enough to maintain faint sparks of life, began to function more normally and soon all four recovered consciousness, drinking in the life-giving oxygen in a rapid succession of breaths so deep that it seemed as though their lungs must burst with each inhalation.

DuQuesne was the first to gain control of himself. His first effort to rise to his feet lifted him from the floor, and he floated lightly to the ceiling, striking it with a gentle bump and remaining suspended in the air. The others, who had not yet attempted to move, stared at him in wide-eyed amazement. Reaching out and clutching one of the supporting columns, he drew himself back to the floor and cautiously removed his leather suit, transferring two heavy automatic pistols as he did so. By gingerly feeling of his injured body, he discovered that no bones were broken, although he was terribly bruised. He then glanced around to learn how his companions were faring. He saw that they were all sitting up, the girls resting, Perkins removing his aviator's costume.

"Good morning, Doctor DuQuesne. What happened when I kicked your friend?"

DuQuesne smiled.

"Good morning, Miss Vaneman. Several things happened. He fell into the controls, turning on all the juice. We left shortly afterward. I tried to shut the power off, and in doing so I balled things up worse than ever. Then I went to sleep, and just woke up."

"Have you any idea where we are?"

"No, but I can make a fair estimate, I think," and glancing at the empty chamber in which the bar had been, he took out his notebook and pen and figured for a few minutes. As he finished, he drew himself along by a handrail to one of the windows, then to another. He returned with a puzzled expression on his face and made a long calculation.

"I don't know exactly what to make of this," he said thoughtfully. "We are so far away from the earth that even the fixed stars are unrecognizable. The power was on exactly forty-eight hours, since that is the life of that particular bar under full current. We should still be close to our own solar system, since it is theoretically impossible to develop any velocity greater than that of light. But in fact, we have. I know enough about astronomy to recognize the fixed stars from any point within a light-year or so of the sun, and I can't see a single familiar star. I never could see how mass could be a function of velocity, and now I am convinced that it is not. We have been accelerating for forty-eight hours!"

He turned to Dorothy.

"While we were unconscious, Miss Vaneman, we had probably attained a velocity of something like seven billion four hundred thirteen million miles per second, and that is the approximate speed at which we are now traveling. We must be nearly six quadrillion miles, and that is a space of several hundred light-years—away from our solar system, or, more plainly, about six times as far away from our earth as the North Star is. We couldn't see our sun with a telescope, even if we knew which way to look for it."

At this paralyzing news, Dorothy's face turned white and Margaret Spencer quietly fainted in her seat.

"Then we can never get back?" asked Dorothy slowly.

At this question, Perkins' self-control gave way and his thin veneer of decency disappeared completely.

"You got us into this whole thing!" he screamed as he leaped at Dorothy with murderous fury gleaming in his pale eyes and his fingers curved into talons. Instead of reaching her, however, he merely sprawled grotesquely in midair, and DuQuesne knocked him clear across the vessel with one powerful blow of his fist.

"Get back there, you cowardly cur," he said evenly. "Even though we are a long way from home, try to remember you're a man, at least. One more break like that and I'll throw you out of the boat. It isn't her fault that we are out here, but our own. The blame for it is a very small matter, anyway; the thing of importance is to get back as soon as possible."

"But how can we get back?" asked Perkins sullenly from the corner where he was crouching, fear in every feature. "The power is gone, the controls are wrecked, and we are hopelessly lost in space."

"Oh, I wouldn't say 'hopelessly,'" returned the other, "I have never been in any situation yet that I couldn't get out of, and I won't be convinced until I am dead that I can't get out of this one. We have two extra power bars, we can fix the board, and if I can't navigate us back close enough to our solar system to find it, I am more of a dub than I think I am. How about a little bite to eat?"

"Show us where it is!" exclaimed Dorothy. "Now that you mention it, I find that I am starved to death."

DuQuesne looked at her keenly.

"I admire your nerve, Miss Vaneman. I didn't suppose that that animal over there would show such a wide streak of yellow, but I was rather afraid that you girls might go to pieces."

"I'm scared blue, of course," Dorothy admitted frankly, "but hysterics won't do any good, and we simply *must* get back."

"Certainly, we must and we will," stated DuQuesne calmly. "If you like, you might find something for us to eat in the galley there, while I see what I can do with this board that I wrecked with my head. By the way, that cubby-hole there is the apartment reserved for you two ladies. We are in rather cramped quarters, but I think you will find everything you need."

As Dorothy drew herself along the handrail toward the room designated, accompanied by the other girl who, though conscious, had paid little attention to anything around her, she could not help feeling a thrill of admiration for the splendid villain who had abducted her. Calm and cool, always master of himself, apparently paying no attention to the terrible bruises which disfigured half his face and doubtless half his body as well, she admitted to herself that it was only his example, which had enabled her to maintain her self-control in their present plight. As she crawled over Perkins' discarded suit, she remembered that he had not taken any weapons from it. After a rapid glance around to assure herself that she was not being watched, she quickly searched the coat, bringing to light not one, but two pistols, which she thrust into her pocket. She saw with relief that they were regulation army automatics, with whose use she was familiar from much target practise with Seaton.

In the room, which was a miniature of the one she had seen on the Skylark, the girls found clothing, toilet articles, and everything necessary for a long trip. As they were setting themselves to rights, Dorothy electing to stay in her riding suit, they surveyed each other frankly and each was reassured by what she saw. Dorothy saw a girl of twenty-two, of her own stature, with a mass of heavy, wavy black hair. Her eyes, a singularly rich and deep brown, contrasted strangely with the beautiful ivory of her skin. She was normally a beautiful girl, thought Dorothy, but her beauty was marred by suffering and privation. Her naturally slender form was thin, her face was haggard and worn. The stranger broke the silence.

"I'm Margaret Spencer," she began abruptly, "former secretary to His Royal Highness, Brookings of Steel. They swindled my father out of an invention worth millions and he died, broken-hearted. I got the job to see if I couldn't get enough evidence to convict them, and I had quite a lot when they caught me. I had some things that they were afraid to lose, and I had them so well hidden that they couldn't find them, so they kidnapped me to make me give them back. They haven't dared kill me so far for fear the evidence will show up after my death—which it will. However, I will be legally dead before long, and then they know the whole thing will come out, so they have brought me out here to make me talk or kill me. Talking won't do me any good now, though, and I don't believe it ever would have. They would have killed me after they got the stuff back, anyway. So you see I, at least, will never get back to the earth alive."

"Cheer up—we'll all get back safely."

"No, we won't. You don't know that man Perkins—if that is his name. I never heard him called any real name before. He is simply unspeakable—vile—hideous—everything that is base. He was my jailer, and I utterly loathe and despise him. He is mean and underhanded and tricky—he reminds me of a slimy, poisonous snake. He will kill me: I know it."

"But how about Doctor DuQuesne? Surely he isn't that kind of man? He wouldn't let him."

"I've never met him before, but from what I heard of him in the office, he's even worse than Perkins, but in an entirely different way. There's nothing small or mean about him, and I don't believe he would go out of his way to hurt anyone, as Perkins would. But he is absolutely cold and hard, a perfect fiend. Where his interests are concerned, there's nothing under the sun, good or bad, that he won't do. But I'm glad that Perkins had me instead of 'The Doctor,' as they call him. Perkins raises such a bitter personal feeling, that anybody would rather die than give up to him in anything. DuQuesne, however, would have tortured me impersonally and scientifically—cold and self-contained all the while and using the most efficient

methods, and I am sure he would have got it out of me some way. He always gets what he goes after."

"Oh, come, Miss Spencer!" Dorothy interrupted the half-hysterical girl. "You're too hard on him. Didn't you see him knock Perkins down when he came after me?"

"Well, maybe he has a few gentlemanly instincts, which he uses when he doesn't lose anything by it. More likely he merely intended to rebuke him for a useless action. He is a firm Pragmatist—anything that is useful is all right, anything that is useless is a crime. More probably yet, he wants you left alive. Of course that is his real reason. He went to the trouble of kidnapping you, so naturally he won't let Perkins or anybody else kill you until he is through with you. Otherwise he would have let Perkins do anything he wanted to with you, without lifting a finger."

"I can't quite believe that," Dorothy replied, though a cold chill struck at her heart as she remembered the inhuman crime attributed to this man, and she quailed at the thought of being in his charge, countless millions of miles from earth, a thought only partly counteracted by the fact that she was now armed. "He has treated us with every consideration so far, let's hope for the best. Anyway, I'm sure that we'll get back safely."

"Why so sure? Have you something up your sleeve?"

"No—or yes, in a way I have, though nothing very definite. I'm Dorothy Vaneman, and I am engaged to the man who discovered the thing that makes this space-car go...."

"That's why they kidnapped you, then—to make him give up all his rights to it. It's like them."

"Yes, I think that's why they did it. But they won't keep me long. Dick Seaton will find me, I know. I feel it."

"But that's exactly what they want!" cried Margaret excitedly. "In my spying around I heard a little about this very thing—the name Seaton brings it to my mind. His car is broken in some way, so that it will kill him the first time he tries to run it."

"That's where they underestimated Dick and his partner. You have heard of Martin Crane, of course?"

"I think I heard his name mentioned in the office, together with Seaton's, but that's all."

"Well, besides other things, Martin is quite a wonderful mechanic, and he found out that our Skylark was spoiled. So they built another one, a lot bigger, and I am sure that they are following us, right now."

"But how can they possibly follow us, when we are going so fast and are so far away?" queried the other girl, once more despondent.

"I don't quite know, but I do know that Dick will find a way. He's simply wonderful. He knows more now than that Doctor DuQuesne will ever learn in all his life, and he will find us in a few days. I feel it in my bones. Besides, I picked Perkins' pockets of these two pistols. Can you shoot an automatic?"

"Yes," replied the other girl, as she seized one of the guns, assured herself that its magazine was full, and slipped it into her pocket. "I used to practise a lot with my father's. This makes me feel a whole lot better. And call me Peggy, won't you? It will seem good to hear my name again. After what I've been through lately, even this trip will be a vacation for me."

"Well, then, cheer up, Peggy dear, we're going to be great friends. Let's go get us all something to eat. I'm simply starved, and I know you are, too."

The presence of the pistol in her pocket and Dorothy's unwavering faith in her lover, lifted the stranger out of the mood of despair into which the long imprisonment, the brutal treatment, and the present situation had plunged her, and she was almost cheerful as they drew themselves along the hand-rail leading to the tiny galley.

"I simply can't get used to the idea of nothing having any weight—look here!" laughed Dorothy, as she took a boiled ham out of the refrigerator and hung it upon an imaginary hook in the air, where it remained motionless. "Doesn't it make you feel funny?"

"It is a queer sensation. I feel light, like a toy balloon, and I feel awfully weird inside. If we have no weight, why does it hurt so when we bump into anything? And when you throw anything, like the Doctor did Perkins, why does it hit as hard as ever?"

"It's mass or inertia or something like that. A thing has it everywhere, whether it weighs anything or not. Dick explained it all to me. I understood it when he told me about it, but I'm afraid it didn't sink in very deep. Did you ever study physics?"

"I had a year of it in college, but it was more or less of a joke. I went to a girls' school, and all we had to do in physics was to get the credit; we didn't have to learn it."

"Me too. Next time I go to school I'm going to Yale or Harvard or some such place, and I'll learn so much mathematics and science that I'll have to wear a bandeau to keep my massive intellect in place."

During this conversation they had prepared a substantial luncheon and had arranged it daintily upon two large trays, in spite of the difficulty caused by the fact that nothing would remain in place by its own weight. The feast prepared, Dorothy took her tray from the table as carefully as she could, and saw the sandwiches and bottles start to float toward the ceiling. Hastily inverting the tray above the escaping viands, she pushed them back down upon the table. In doing so she lifted herself clear from the floor, as she had forgotten to hold herself down.

"What'll we do, anyway?" she wailed when she had recovered her position. "Everything wants to fly all over the place!"

"Put another tray on top of it and hold them together," suggested Margaret. "I wish we had a birdcage. Then we could open the door and grab a sandwich as it flies out."

By covering the trays the girls finally carried the luncheon out into the main compartment, where they gave DuQuesne and Perkins one of the trays and all fell to eating hungrily. DuQuesne paused with a glint of amusement in his one sound eye as he saw Dorothy trying to pour ginger ale out of a bottle.

"It can't be done, Miss Vaneman. You'll have to drink it through a straw. That will work, since our air pressure is normal. Be careful not to choke on it, though; your swallowing will have to be all muscular out here. Gravity won't help you. Or wait a bit—I have the control board fixed and it will be a matter of only a few minutes to put in another bar and get enough acceleration to take the place of gravity."

He placed one of the extra power bars in the chamber and pushed the speed lever into the first notch, and there was a lurch of the whole vessel as it swung around the bar so that the floor was once more perpendicular to it. He took a couple of steps, returned, and advanced the lever another notch.

"There that's about the same as gravity. Now we can act like human beings and eat in comfort."

"That's a wonderful relief, Doctor!" cried Dorothy. "Are we going back toward the earth?"

"Not yet. I reversed the bar, but we will have to use up all of this one before we can even start back. Until this bar is gone we will merely be slowing down."

As the meal progressed, Dorothy noticed that DuQuesne's left arm seemed almost helpless, and that he ate with great difficulty because of his terribly bruised face. As soon as they had removed the trays she went into her room, where she had seen a small medicine chest, and brought out a couple of bottles.

"Lie down here, Doctor DuQuesne," she commanded. "I'm going to apply a little first-aid to the injured. Arnica and iodine are all I can

find, but they'll help a little."

"I'm all right," began the scientist, but at her imperious gesture he submitted, and she bathed his battered features with the healing lotion and painted the worst bruises with iodine.

"I see your arm is lame. Where does it hurt?"

"Shoulder's the worst. I rammed it through the board when we started out."

He opened his shirt at the throat and bared his shoulder, and Dorothy gasped—as much at the size and power of the muscles displayed, as at the extent and severity of the man's injuries. Stepping into the gallery, she brought out hot water and towels and gently bathed away the clotted blood that had been forced through the skin.

"Massage it a little with the arnica as I move the arm," he directed coolly, and she did so, pityingly. He did not wince and made no sign of pain, but she saw beads of perspiration appear upon his face, and wondered at his fortitude.

"That's fine," he said gratefully as she finished, and a peculiar expression came over his face. "It feels one hundred per cent better already. But why do you do it? I should think you would feel like crowning me with that basin instead of playing nurse."

"Efficiency," she replied with a smile. "I'm taking a leaf out of your own book. You are our chief engineer, you know, and it won't do to have you laid up."

"That's a logical explanation, but it doesn't go far enough," he rejoined, still studying her intently. She did not reply, but turned to Perkins.

"How are you, Mr. Perkins? Do you require medical attention?"

"No," growled Perkins from the seat in which he had crouched immediately after eating. "Keep away from me, or I'll cut your heart out!"

"Shut up!" snapped DuQuesne. "Remember what I said?"

"I haven't done anything," snarled the other.

"I said I would throw you out if you made another break," DuQuesne informed him evenly, "and I meant it. If you can't talk decently, keep still. Understand that you are to keep off Miss Vaneman, words and actions. I am in charge of her, and I will put up with no interference whatever. This is your last warning."

"How about Spencer, then?"

"I have nothing to say about her, she's not mine," responded DuQuesne with a shrug.

An evil light appeared in Perkins' eyes and he took out a wicked-looking knife and began to strop it carefully upon the leather of the seat, glaring at his victim the while.

"Well, *I* have something to say...." blazed Dorothy, but she was silenced by a gesture from Margaret, who calmly took the pistol from her pocket, jerked the slide back, throwing a cartridge into the chamber, and held the weapon up on one finger, admiring it from all sides.

"Don't worry about his knife. He has been sharpening it for my benefit for the last month. He doesn't mean anything by it."

At this unexpected show of resistance, Perkins stared at her for an instant, then glanced at his coat.

"Yes, this was yours, once. You needn't bother about picking up your coat, they're both gone. You might be tempted to throw that knife, so drop it on the floor and kick it over to me before I count three.

"One." The heavy pistol steadied into line with his chest and her finger tightened on the trigger.

"Two." He obeyed and she picked up the knife. He turned to DuQuesne, who had watched the scene unmoved, a faint smile upon

his saturnine face.

"Doctor!" he cried, shaking with fear. "Why don't you shoot her or take that gun away from her? Surely you don't want to see me murdered?"

"Why not?" replied DuQuesne calmly. "It is nothing to me whether she kills you or you kill her. You brought it on yourself by your own carelessness. Any man with brains doesn't leave guns lying around within reach of prisoners, and a blind man could have seen Miss Vaneman getting your hardware."

"You saw her take them and didn't warn me?" croaked Perkins.

"Why should I warn you? If you can't take care of your own prisoner she earns her liberty, as far as I am concerned. I never did like your style, Perkins, especially your methods of handling—or rather mishandling—women. You could have made her give up the stuff she recovered from that ass Brookings inside of an hour, and wouldn't have had to kill her afterward, either."

"How?" sneered the other. "If you are so good at that kind of thing, why didn't you try it on Seaton and Crane?"

"There are seven different methods to use on a woman like Miss Spencer, each of which will produce the desired result. The reason I did not try them on either Seaton or Crane is that they would have failed. Your method of indirect action is probably the only one that will succeed. That is why I adopted it."

"Well, what are you going to do about it?" shrieked Perkins. "Are you going to sit there and lecture all day?"

"I am going to do nothing whatever," answered the scientist coldly. "If you had any brains you would see that you are in no danger. Miss Spencer will undoubtedly kill you if you attack her—not otherwise. That is an Anglo-Saxon weakness."

"Did you see me take the pistols?" queried Dorothy.

"Certainly. I'm not blind. You have one of them in your right coat pocket now."

"Then why didn't you, or don't you, try to take it away from me?" she asked in wonder.

"If I had objected to your having them, you would never have got them. If I didn't want you to have a gun now, I would take it away from you. You know that, don't you?" and his black eyes stared into her violet ones with such calm certainty of his ability that she felt her heart sink.

"Yes," she admitted finally, "I believe you could—that is, unless I were angry enough to shoot you."

"That wouldn't help you. I can shoot faster and straighter than you can, and would shoot it out of your hand. However, I have no objection to your having the gun, since it is no part of my plan to offer you any further indignity of any kind. Even if you had the necessary coldness of nerve or cruelty of disposition—of which I have one, Perkins the other, and you neither—you wouldn't shoot me now, because you can't get back to the earth without me. After we get back I will take the guns away from both of you if I think it desirable. In the meantime, play with them all you please."

"Has Perkins any more knives or guns or things in his room?" demanded Dorothy.

"How should I know?" indifferently; then, as both girls started for Perkins' room he ordered brusquely:

"Sit down, Miss Vaneman. Let them fight it out. Perkins has his orders to lay off you—you lay off him. I'm not taking any chances of getting you hurt, that's one reason I wanted you armed. If he gets gay, shoot him; otherwise, hands off completely."

Dorothy threw up her head in defiance, but meeting his cold stare she paused irresolutely and finally sat down, biting her lips in anger, while the other girl went on.

"That's better. She doesn't need any help to whip that yellow dog. He's whipped already. He never would think of fighting unless the odds were three to one in his favor."

When Margaret had returned from a fruitless search of Perkins' room and had assured herself that he had no more weapons concealed about his person, she thrust the pistol back into her pocket and sat down.

"That ends that," she declared. "I guess you will be good now, won't you, Mr. Perkins?"

"Yes," that worthy muttered. "I have to be, now that you've got the drop on me and DuQuesne's gone back on me. But wait until we get back! I'll get you then, you...."

"Stop right there!" sharply. "There's nothing I would rather do than shoot you right now, if you give me the slightest excuse, such as that name you were about to call me. Now go ahead!"

DuQuesne broke the silence that followed.

"Well, now that the battle is over, and since we are fed and rested, I suggest that we slow down a bit and get ready to start back. Pick out comfortable seats, everybody, and I'll shoot a little more juice through that bar."

Seating himself before the instrument board, he advanced the speed lever slowly until nearly three-quarters of the full power was on, as much as he thought the others could stand.

For sixty hours he drove the car, reducing the acceleration only at intervals during which they ate and walked about their narrow quarters in order to restore the blood to circulation in their suffering bodies. The power was not reduced for sleep; everyone slept as best he could.

Dorothy and Margaret talked together at every opportunity, and a real intimacy grew up between them. Perkins was for the most part sullenly quiet, knowing himself despised by all the others and having no outlet here for his particular brand of cleverness. DuQuesne was always occupied with his work and only occasionally addressed a remark to one or another of the party, except during

meals. At those periods of general recuperation, he talked easily and well upon many topics. There was no animosity in his bearing nor did he seem to perceive any directed toward himself, but when any of the others ventured to infringe upon his ideas of how discipline should be maintained, DuQuesne's reproof was merciless. Dorothy almost liked him, but Margaret insisted that she considered him worse than ever.

When the bar was exhausted, DuQuesne lifted the sole remaining cylinder into place.

"We should be nearly stationary with respect to the earth," he remarked. "Now we will start back."

"Why, it felt as though we were picking up speed for the last three days!" exclaimed Margaret.

"Yes, it feels that way because we have nothing to judge by. Slowing down in one direction feels exactly like starting up in the opposite one. There is no means of knowing whether we are standing still, going away from the earth, or going toward it, since we have nothing stationary upon which to make observations. However, since the two bars were of exactly the same size and were exerted in opposite directions except for a few minutes after we left the earth, we are nearly stationary now. I will put on power until this bar is something less than half gone, then coast for three or four days. By the end of that time we should be able to recognize our solar system from the appearance of the fixed stars."

He again advanced the lever, and for many hours silence filled the car as it hurtled through space. DuQuesne, waking up from a long nap, saw that the bar no longer pointed directly toward the top of the ship, perpendicular to the floor, but was inclined at a sharp angle. He reduced the current, and felt the lurch of the car as it swung around the bar, increasing the angle many degrees. He measured the angle carefully and peered out of all the windows on one side of the car. Returning to the bar after a time, he again measured the angle, and found that it had increased greatly.

"What's the matter, Doctor DuQuesne?" asked Dorothy, who had also been asleep.

"We are being deflected from our course. You see the bar doesn't point straight up any more? Of course the direction of the bar hasn't changed, the car has swung around it."

"What does that mean?"

"We have come close enough to some star so that its attraction swings the bottom of the car around. Normally, you know, the bottom of the car follows directly behind the bar. It doesn't mean much yet except that we are being drawn away from our straight line, but if the attraction gets much stronger it may make us miss our solar system completely. I have been looking for the star in question, but can't see it yet. We'll probably pull away from it very shortly."

He threw on the power, and for some time watched the bar anxiously, expecting to see it swing back into the vertical, but the angle continually increased. He again reduced the current and searched the heavens for the troublesome body.

"Do you see it yet?" asked Dorothy with concern.

"No, there's apparently nothing near enough to account for all this deflection."

He took out a pair of large night-glasses and peered through them for several minutes.

"Good God! It's a dead sun, and we're nearly onto it! It looks as large as our moon!"

Springing to the board, he whirled the bar into the vertical. He took down a strange instrument, went to the bottom window, and measured the apparent size of the dark star. Then, after cautioning the rest of the party to sit tight, he advanced the lever farther than it had been before. After half an hour he again slackened the pace and

made another observation, finding to his astonishment that the dark mass had almost doubled its apparent size! Dorothy, noting his expression, was about to speak, but he forestalled her.

"We lost ground, instead of gaining, that spurt," he remarked, as he hastened to his post. "It must be inconceivably large, to exert such an enormous attractive force at this distance. We'll have to put on full power. Hang onto yourselves as best you can."

He then pushed the lever out to its last notch and left it there until the bar was nearly gone, only to find that the faint disk of the monster globe was even larger than before, being now visible to the unaided eye. Revived, the three others saw it plainly—a great dim circle, visible as is the dark portion of the new moon—and, the power shut off, they felt themselves falling toward it with sickening speed. Perkins screamed with mad fear and flung himself grovelling upon the floor. Margaret, her nerves still unstrung, clutched at her heart with both hands. Dorothy, though her eyes looked like great black holes in her white face, looked DuQuesne in the eye steadily.

"This is the end, then?"

"Not yet," he replied in a calm and level voice. "The end will not come for a good many hours, as I have calculated that it will take at least two days, probably more, to fall the distance we have to go. We have all that time in which to think out a way of escape."

"Won't the outer repulsive shell keep us from striking it, or at least break the force of our fall?"

"No. It was designed only as protection from meteorites and other small bodies. It is heavy enough to swing us away from a small planet, but it will be used up long before we strike."

He lighted a cigarette and sat at case, as though in his own study, his brow wrinkled in thought as he made calculations in his notebook. Finally he rose to his feet.

"There's only one chance that I can see. That is to gather up every scrap of copper we have and try to pull ourselves far enough out of

line so that we will take an hyperbolic orbit around that body instead of falling into it."

"What good will that do us?" asked Margaret, striving for self-control. "We will starve to death finally, won't we?"

"Not necessarily. That will give us time to figure out something else."

"You won't have to figure out anything else, Doctor," stated Dorothy positively. "If we miss that moon, Dick and Martin will find us before very long."

"Not in this life. If they tried to follow us, they're both dead before now."

"That's where even you are wrong!" she flashed at him. "They knew you were wrecking our machine, so they built another one, a good one. And they know a lot of things about this new metal that you have never dreamed of, since they were not in the plans you stole."

DuQuesne went directly to the heart of the matter, paying no attention to her barbed shafts.

"Can they follow us through space without seeing us?" he demanded.

"Yes—or at least, I think they can."

"How do they do it?"

"I don't know—I wouldn't tell you if I did."

"You'll tell if you know," he declared, his voice cutting like a knife. "But that can wait until after we get out of this. The thing to do now is to dodge that world."

He searched the vessel for copper, ruthlessly tearing out almost everything that contained the metal, hammering it flat and throwing it into the power-plant. He set the bar at right angles to the line of

their fall and turned on the current. When the metal was exhausted, he made another series of observations upon the body toward which they were falling, and reported quietly:

"We made a lot of distance, but not enough. Everything goes in, this time."

He tore out the single remaining light-wire, leaving the car in darkness save for the diffused light of his electric torch, and broke up the only remaining motor. He then took his almost priceless Swiss watch, his heavy signet ring, his scarf pin, and the cartridges from his pistol, and added them to the collection. Flashing his lamp upon Perkins, he relieved him of everything he had which contained copper.

"I think I have a few pennies in my pocketbook," suggested Dorothy.

"Get 'em," he directed briefly, and while she was gone he searched Margaret, without result save for the cartridges in her pistol, as she had no jewelry remaining after her imprisonment. Dorothy returned and handed him everything she had found.

"I would like to keep this ring," she said slowly, pointing to a slender circlet of gold set with a solitaire diamond, "if you think there is any chance of us getting clear."

"Everything goes that has any copper in it," he said coldly, "and I am glad to see that Seaton is too good a chemist to buy any platinum jewelry. You may keep the diamond, though," as he wrenched the jewel out of its setting and returned it to her.

He threw all the metal into the central chamber and the vessel gave a tremendous lurch as the power was again applied. It was soon spent, however, and after the final observation, the others waiting in breathless suspense for him to finish his calculations, he made his curt announcement.

"Not enough."

Perkins, his mind weakened by the strain of the last few days, went completely insane at the words. With a wild howl he threw himself

at the unmoved scientist, who struck him with the butt of his pistol as he leaped, the mighty force of DuQuesne's blow crushing his skull like an eggshell and throwing him backward to the opposite side of the vessel. Margaret lay in her seat in a dead faint. Dorothy and DuQuesne looked at each other in the feeble light of the torch. To the girl's amazement, the man was as calm as though he were safe in his own house, and she made a determined effort to hold herself together.

"What next, Doctor DuQuesne?"

"I don't know. We have a couple of days yet, at least. I'll have to study awhile."

"In that time Dick will find us, I know."

"Even if they do find us in time, which I doubt, what good will it do? It simply means that they will go with us instead of saving us, for of course they can't pull away, since we couldn't. I hope they don't find us, but locate this star in time to keep away from it."

"Why?" she gasped. "You have been planning to kill both of them! I should think you would be delighted to take them with us?"

"Far from it. Please try to be logical. I intended to remove them because they stood in the way of my developing this new metal. If I am to be out of the way—and frankly, I see very little chance of getting out of this—I hope that Seaton goes ahead with it. It is the greatest discovery the world has ever known, and if both Seaton and I, the only two men in the world who know how to handle it, drop out, it will be lost for perhaps hundreds of years."

"If Dick's finding us means that he must go, too, of course I hope that he won't find us, but I don't believe that. I simply know that he could get us away from here."

She continued more slowly, almost speaking to herself, her heart sinking with her voice:

"He is following us, and he won't stop even if he does see this dead star and knows that he can't get away. We will die together."

"There's no denying the fact that our situation is critical, but you know a man isn't dead until after his heart stops beating. We have two whole days yet, and in that time, I can probably dope out some way of getting away from here."

"I hope so," she replied, keeping her voice from breaking only by a great effort. "But go ahead with your doping. I'm worn out." She drew herself down upon one of the seats and stared at the ceiling, fighting to restrain an almost overpowering impulse to scream.

Thus the hours wore by—Perkins dead; Margaret still unconscious; Dorothy lying in her seat, her thoughts a formless prayer, buoyed up only by her faith in God and in her lover; DuQuesne self-possessed, smoking innumerable cigarettes, his keen mind grappling with its most desperate problem, grimly fighting until the very last instant of life—while the powerless space-car fell with an appalling velocity, faster and faster; falling toward that cold and desolate monster of the heaven.

CHAPTER X

The Rescue

Seaton and Crane drove the Skylark in the direction indicated by the unwavering object-compass with the greatest acceleration they could stand, each man taking a twelve-hour watch at the instrument board.

Now, indeed, did the Skylark justify the faith of her builders, and the two inventors, with an exultant certainty of their success, flew out beyond man's wildest imaginings. Had it not been for the haunting fear for Dorothy's safety, the journey would have been one of pure triumph, and even that anxiety did not prevent a profound joy in the enterprise.

"If that misguided mutt thinks he can pull off a stunt like that and get away with it, he's got another think coming," asserted Seaton,

after making a reading on the other car after several days of the flight. "He went off half-cocked this time, for sure, and we've got him foul. We'd better put on some negative pretty soon hadn't we, Mart? Only a little over a hundred light-years now."

Crane nodded agreement and Seaton continued:

"It'll take as long to stop, of course, as it has taken to get out here, and if we ram them—GOOD NIGHT! Let's figure it out as nearly as we can."

They calculated their own speed, and that of the other vessel, as shown by the various readings taken, and applied just enough negative acceleration to slow the Skylark down to the speed of the other space-car when they should come up with it. They smiled at each other in recognition of the perfect working of the mechanism when the huge vessel had spun, with a sickening lurch, through a complete half-circle, the instant the power was reversed. Each knew that they were actually traveling in a direction that to them seemed "down," but with a constantly diminishing velocity, even though they seemed to be still going "up" with an increasing speed.

Until nearly the end of the calculated time the two took turns as before, but as the time of meeting drew near both men were on the alert, taking readings on the object-compass every few minutes. Finally Crane announced:

"We are almost on them, Dick. They are so close that it is almost impossible to time the needle—less than ten thousand miles."

Seaton gradually increased the retarding force until the needle showed that they were very close to the other vessel and maintaining a constant distance from it. He then shut off the power, and both men hurried to the bottom window to search for the fleeing ship with their powerful night-glasses. They looked at each other in amazement as they felt themselves falling almost directly downward, with an astounding acceleration.

"What do you make of it, Dick?" asked Crane calmly, as he brought his glasses to his eyes and stared out into the black heavens,

studded with multitudes of brilliant and unfamiliar stars.

"I don't make it at all, Mart. By the feel, I should say we were falling toward something that would make our earth look like a pin-head. I remember now that I noticed that the bus was getting a little out of plumb with the bar all this last watch. I didn't pay much attention to it, as I couldn't see anything out of the way. Nothing but a sun could be big enough to raise all this disturbance, and I can't see any close enough to be afraid of, can you?"

"No, and I cannot see the Steel space-car, either. Look sharp."

"Of course," Seaton continued to argue as he peered out into the night, "it is theoretically possible that a heavenly body can exist large enough so that it could exert even this much force and still appear no larger than an ordinary star, but I don't believe it is probable. Give me three or four minutes of visual angle and I'll believe anything, but none of these stars are big enough to have any visual angle at all. Furthermore...."

"There is at least half a degree of visual angle!" broke in his friend intensely. "Just to the left of that constellation that looks so much like a question mark. It is not bright, but dark, like a very dark moon —barely perceptible."

Seaton pointed his glass eagerly in the direction indicated.

"Great Cat!" he ejaculated. "I'll say that's some moon! Wouldn't that rattle your slats? And there's DuQuesne's bus, too, on the right edge. Get it?"

As they stood up, Seaton's mood turned to one of deadly earnestness, and a grave look came over Crane's face as the seriousness of their situation dawned upon them. Trained mathematicians both, they knew instantly that that unknown world was of inconceivable mass, and that their chance of escape was none too good, even should they abandon the other craft to its fate. Seaton stared at Crane, his fists clenched and drops of perspiration standing on his forehead. Suddenly, with agony in his eyes and in his voice, he spoke.

"Mighty slim chance of getting away if we go through with it, old man.... Hate like the devil.... Have no right to ask you to throw yourself away, too."

"Enough of that, Dick. You had nothing to do with my coming: you could not have kept me away. We will see it through."

Their hands met in a fierce clasp, broken by Seaton, as he jumped to the levers with an intense:

"Well, let's get busy!"

In a few minutes they had reduced the distance until they could plainly see the other vessel, a small black circle against the faintly luminous disk. As it leaped into clear relief in the beam of his powerful searchlight, Seaton focused the great attractor upon the fugitive car and threw in the lever which released the full force of that mighty magnet, while Crane attracted the attention of the vessel's occupants by means of a momentary burst of solid machine-gun bullets, which he knew would glance harmlessly off the steel hull.

After an interminable silence, DuQuesne drew himself out of his seat. He took a long inhalation, deposited the butt of his cigarette carefully in his ash tray, and made his way to his room. He returned with three heavy fur suits provided with air helmets, two of which he handed to the girls, who were huddled in a seat with their arms around each other. These suits were the armor designed by Crane for use in exploring the vacuum and the intense cold of dead worlds. Air-tight, braced with fine steel netting, and supplied with air at normal pressure from small tanks by automatic valves, they made their wearers independent of surrounding conditions of pressure and temperature.

"The next thing to do," DuQuesne stated calmly, "is to get the copper off the outside of the ship. That is the last resort, as it robs us of our only safeguard against meteorites, but this is the time for last-

resort measures. I'm going after that copper. Put these suits on, as our air will leave as soon as I open the door, and practically an absolute vacuum and equally absolute zero will come in."

As he spoke, the ship was enveloped in a blinding glare and they were thrown flat as the vessel slowed down in its terrific fall. The thought flashed across DuQuesne's mind that they had already entered the atmosphere of that monster globe and were being slowed down and set afire by its friction, but he dismissed it as quickly as it had come—the light in that case would be the green of copper, not this bluish-white. His next thought was that there had been a collision of meteors in the neighborhood, and that their retardation was due to the outer coating. While these thoughts were flickering through his mind, they heard an insistent metallic tapping, which DuQuesne recognized instantly.

"A machine-gun!" he blurted in amazement. "How in...."

"It's Dick!" screamed Dorothy, with flashing eyes. "He's found us, just as I knew he would. You couldn't beat Dick and Martin in a thousand years!"

The tension under which they had been laboring so long suddenly released, the two girls locked their arms around each other in a half-hysterical outburst of relief. Margaret's meaningless words and Dorothy's incoherent praises of her lover and Crane mingled with their racking sobs as each fought to recover self-possession.

DuQuesne had instantly mounted to the upper window. Throwing back the cover, he flashed his torch rapidly. The glare of the searchlight was snuffed out and he saw a flashing light spell out in dots and dashes:

"Can you read Morse?"

"Yes," he signalled back. "Power gone, drifting into...."

"We know it. Will you resist?"

"No."

"Have you fur pressure-suits?"

"Yes."

"Put them on. Shut off your outer coating. Will touch so your upper door against our lower. Open, transfer quick."

"O. K."

Hastily returning to the main compartment, he briefly informed the girls as to what had happened. All three donned the suits and stationed themselves at the upper opening. Rapidly, but with unerring precision, the two ships were brought into place and held together by the attractor. As the doors were opened, there was a screaming hiss as the air of the vessels escaped through the narrow crack between them. The passengers saw the moisture in the air turn into snow, and saw the air itself first liquefy and then freeze into a solid coating upon the metal around the orifices at the touch of the frightful cold outside—the absolute zero of interstellar space, about four hundred sixty degrees below zero in the every-day scale of temperature. The moisture of their breath condensed upon the inside of the double glasses of their helmets, rendering sight useless.



DuQuesne seized her and tossed her lightly through the doorway in such a manner that she would not touch the metal, which would have frozen instantly anything coming into contact with it.

Dorothy pushed the other girl ahead of her. DuQuesne seized her and tossed her lightly through the doorway in such a manner that she would not touch the metal, which would have frozen instantly

anything coming into contact with it. Seaton was waiting. Feeling a woman's slender form in his arms, he crushed her to him in a mighty embrace, and was astonished to feel movements of resistance, and to hear a strange, girlish voice cry out:

"Don't! It's me! Dorothy's next!"

Releasing her abruptly, he passed her on to Martin and turned just in time to catch his sweetheart, who, knowing that he would be there and recognizing his powerful arms at the first touch, returned his embrace with a fierce intensity which even he had never suspected that she could exert. They stood motionless, locked in each other's arms, while DuQuesne dove through the opening and snapped the door shut behind him.

The air-pressure and temperature back to normal, the cumbersome suits were hastily removed, and Seaton's lips met Dorothy's in a long, clinging caress. DuQuesne's cold, incisive voice broke the silence.

"Every second counts. I would suggest that we go somewhere."

"Just a minute!" snapped Crane. "Dick, what shall we do with this murderer?"

Seaton had forgotten DuQuesne utterly in the joy of holding his sweetheart in his arms, but at his friend's words, he faced about and his face grew stern.

"By rights, we ought to chuck him back into his own tub and let him go to the devil," he said savagely, doubling his fists and turning swiftly.

"No, no, Dick," remonstrated Dorothy, seizing his arm. "He treated us very well, and saved my life once. Anyway, you mustn't kill him."

"No, I suppose not," grudgingly assented her lover, "and I won't, either, unless he gives me at least half an excuse."

"We might iron him to a post?" suggested Crane, doubtfully.

"I think there's a better way," replied Seaton. "He may be able to work his way. His brain hits on all twelve, and he's strong as a bull. Our chance of getting back isn't a certainty, as you know." He turned to DuQuesne.

"I've heard that your word is good."

"It has never been broken."

"Will you give your word to act as one of the party, for the good of us all, if we don't iron you?"

"Yes—until we get back to the earth. Provided, of course, that I reserve the right to escape at any time between now and then if I wish to and can do so without injuring the vessel or any member of the party in any way."

"Agreed. Let's get busy—we're altogether too close to that dud there to suit me. Sit tight, everybody, we're on our way!" he cried, as he turned to the board, applied one notch of power, and shut off the attractor. The Skylark slowed down a trifle in its mad fall, the other vessel continued on its way—a helpless hulk, manned by a corpse, falling to destruction upon the bleak wastes of a desert world.

"Hold on!" said DuQuesne sharply. "Your power is the same as mine was, in proportion to your mass, isn't it?"

"Yes."

"Then our goose is cooked. I couldn't pull away from it with everything I had, couldn't even swing out enough to make an orbit, either hyperbolic or elliptical around it. With a reserve bar you will be able to make an orbit, but you can't get away from it."

"Thanks for the dope. That saves our wasting some effort. Our power-plant can be doubled up in emergencies, thanks to Martin's cautious old bean. We'll simply double her up and go away from here."

"There is one thing we didn't consider quite enough," said Crane, thoughtfully. "I started to faint back there before the full power of even one motor was in use. With the motor doubled, each of us will be held down by a force of many tons—we would all be helpless."

"Yes," added Dorothy, with foreboding in her eyes, "we were all unconscious on the way out, except Dr. DuQuesne."

"Well, then, Blackie and I, as the huskiest members of the party, will give her the juice until only one of us is left with his eyes open. If that isn't enough to pull us clear, we'll have to give her the whole works and let her ramble by herself after we all go out. How about it, Blackie?" unconsciously falling into the old Bureau nickname. "Do you think we can make it stop at unconsciousness with double power on?"

DuQuesne studied the two girls carefully.

"With oxygen in the helmets instead of air, we all may be able to stand it. These special cushions keep the body from flattening out, as it normally would under such a pressure. The unconsciousness is simply a suffocation caused by the lateral muscles being unable to lift the ribs—in other words, the air-pumps aren't strong enough for the added work put upon them. At least we stand a chance this way. We may live through the pressure while we are pulling away, and we certainly shall die if we don't pull away."

After a brief consultation, the men set to work with furious haste. While Crane placed extra bars in each of the motors and DuQuesne made careful observations upon the apparent size of the now plainly visible world toward which they were being drawn so irresistibly, Seaton connected the helmets with the air-and oxygen-tanks through a valve upon the board, by means of which he could change at will the oxygen content of the air they breathed. He then placed the strange girl, who seemed dazed by the frightful sensation of their never-ending fall, upon one of the seats, fitted the cumbersome helmet upon her head, strapped her carefully into place, and turned to Dorothy. In an instant they were in each other's arms. He felt her labored breathing and the wild beating of her

heart, pressed so closely to his, and saw the fear of the unknown in the violet depths of her eyes, but she looked at him unflinchingly.

"Dick, sweetheart, if this is good-bye...."

He interrupted her with a kiss.

"It isn't good-bye yet, Dottie mine. This is merely a trial effort, to see what we will have to do to get away. Next time will be the time to worry."

"I'm not worried, really ... but in case ... you see ... I ... we ..."

The gray eyes softened and misted over as he pressed his cheek to hers.

"I understand, sweetheart," he whispered. "This is not good-bye, but if we don't pull through we'll go together, and that is what we both want."

As Crane and DuQuesne finished their tasks, Seaton fitted his sweetheart's helmet, placed her tenderly upon the seat, buckled the heavy restraining straps about her slender body, and donned his own helmet. He took his place at the main instrument board, DuQuesne stationing himself at the other.

"What did you read on it, Blackie?" asked Seaton.

"Two degrees, one minute, twelve seconds diameter," replied DuQuesne. "Altogether too close for comfort. How shall we apply the power? One of us must stay awake, or we'll go on as long as the bars last."

"You put on one notch, then I'll put on one. We can feel the bus jump with each notch. We'll keep it up until one of us is so far gone that he can't raise the bar—the one that raises last will have to let the ship run for thirty minutes or an hour, then cut down his power. Then the other fellow will revive and cut his off, for an observation. How's that?"

"All right."

They took their places, and Seaton felt the vessel slow down in its horrible fall as DuQuesne threw his lever into the first notch. He responded instantly by advancing his own, and notch after notch the power applied to the ship by the now doubled motor was rapidly increased. The passengers felt their suits envelope them and began to labor for breath. Seaton slowly turned the mixing valve, a little with each advance of his lever, until pure oxygen flowed through the pipes. The power levers had moved scarcely half of their range, yet minutes now intervened between each advance instead of seconds, as at the start.

As each of the two men was determined that he would make the last advance, the duel continued longer than either would have thought possible. Seaton made what he thought his final effort and waited—only to feel, after a few minutes, the upward surge telling him that DuQuesne was still able to move his lever. His brain reeled. His arm seemed paralyzed by its own enormous weight, and felt as though it, the rolling table upon which it rested, and the supporting framework were so immovably welded together that it was impossible to move it even the quarter-inch necessary to operate the ratchet-lever. He could not move his body, which was oppressed by a sickening weight. His utmost efforts to breathe forced only a little of the life-giving oxygen into his lungs, which smarted painfully at the touch of the undiluted gas, and he felt that he could not long retain consciousness under such conditions. Nevertheless, he summoned all his strength and advanced the lever one more notch. He stared at the clock-face above his head, knowing that if DuQuesne could advance his lever again he would lose consciousness and be beaten. Minute after minute went by, however, and the acceleration of the ship remained constant. Seaton, knowing that he was in sole control of the power-plant, fought to retain possession of his faculties, while the hands of the clock told off the interminable minutes.

After an eternity of time an hour had passed, and Seaton attempted to cut down his power, only to find with horror that the long strain had so weakened him that he could not reverse the ratchet. He was

still able, however, to give the lever the backward jerk which disconnected the wires completely—and the safety straps creaked with the sudden stress as, half the power instantly shut off, the suddenly released springs tried to hurl five bodies against the ceiling. After a few minutes DuQuesne revived and slowly cut off his power. To the dismay of both men they were again falling!

DuQuesne hurried to the lower window to make the observation, remarking:

"You're a better man than I am, Gunga Din."

"Only because you're so badly bunged up. One more notch would've got my goat," replied Seaton frankly as he made his way to Dorothy's side. He noticed as he reached her, that Crane had removed his helmet and was approaching the other girl. By the time DuQuesne had finished the observation, the other passengers had completely recovered, apparently none the worse for their experience.

"Did we gain anything?" asked Seaton eagerly.

"I make it two, four, thirteen. We've lost about two minutes of arc. How much power did we have on?"

"A little over half—thirty-two points out of sixty possible."

"We were still falling pretty fast. We'll have to put on everything we've got. Since neither of us can put it on we'll have to rig up an automatic feed. It'll take time, but it's the only way."

"The automatic control is already there," put in Crane, forestalling Seaton's explanation. "The only question is whether we will live through it—and that is not really a question, since certain death is the only alternative. We must do it."

"We sure must," answered Seaton soberly.

Dorothy gravely nodded assent.

"What do you fellows think of a little plus pressure on the oxygen?" asked Seaton. "I think it would help a lot."

"I think it's a good idea," said DuQuesne, and Crane added:

"Four or five inches of water will be about all the pressure we can stand. Any more might burn our lungs too badly."

The pressure apparatus was quickly arranged and the motors filled to capacity with reserve bars—enough to last seventy-two hours—the scientists having decided that they must risk everything on one trial and put in enough, if possible, to pull them clear out of the influence of this center of attraction, as the time lost in slowing up to change bars might well mean the difference between success and failure. Where they might lie at the end of the wild dash for safety, how they were to retrace their way with their depleted supply of copper, what other dangers of dead star, planet, or sun lay in their path—all these were terrifying questions that had to be ignored.

DuQuesne was the only member of the party who actually felt any calmness, the quiet of the others expressing their courage in facing fear. Life seemed very sweet and desirable to them, the distant earth a very Paradise! Through Dorothy's mind flashed the visions she had built up during long sweet hours, visions of a long life with Seaton. As she breathed an inaudible prayer, she glanced up and saw Seaton standing beside her, gazing down upon her with his very soul in his eyes. Never would she forget the expression upon his face. Even in that crucial hour, his great love for her overshadowed every other feeling, and no thought of self was in his mind—his care was all for her. There was a long farewell caress. Both knew that it might be goodbye, but both were silent as the violet eyes and the gray looked into each other's depths and conveyed messages far beyond the power of words. Once more he adjusted her helmet and strapped her into place.

As Crane had in the meantime cared for the other girl, the men again took their places and Seaton started the motor which would

automatically advance the speed levers, one notch every five seconds, until the full power of both motors was exerted. As the power was increased, he turned the valve as before, until the helmets were filled with pure oxygen under a pressure of five inches of water.

Margaret Spencer, weakened by her imprisonment, was the first to lose consciousness, and soon afterward Dorothy felt her senses leave her. A half-minute, in the course of which six mighty surges were felt, as more of the power of the doubled motor was released, and Crane had gone, calmly analyzing his sensations to the last. After a time DuQuesne also lapsed into unconsciousness, making no particular effort to avoid it, as he knew that the involuntary muscles would function quite as well without the direction of the will. Seaton, although he knew it was useless, fought to keep his senses as long as possible, counting the impulses he felt as the levers were advanced.

"Thirty-two." He felt exactly as he had before, when he had advanced the lever for the last time.

"Thirty-three." A giant hand shut off his breath completely, though he was fighting to his utmost for air. An intolerable weight rested upon his eyeballs, forcing them backward into his head. The universe whirled about him in dizzy circles—orange and black and green stars flashed before his bursting eyes.

"Thirty-four." The stars became more brilliant and of more variegated colors, and a giant pen dipped in fire was writing equations and mathematico-chemical symbols upon his quivering brain. He joined the circling universe, which he had hitherto kept away from him by main strength, and whirled about his own body, tracing a logarithmic spiral with infinite velocity—leaving his body an infinite distance behind.

"Thirty-five." The stars and the fiery pen exploded in a wild coruscation of searing, blinding light and he plunged from his spiral into a black abyss.

In spite of the terrific stress put upon the machine, every part functioned perfectly, and soon after Seaton had lost consciousness the vessel began to draw away from the sinister globe; slowly at first, faster and faster as more and more of the almost unlimited power of the mighty motor was released. Soon the levers were out to the last notch and the machine was exerting its maximum effort. One hour and an observer upon the Skylark would have seen that the apparent size of the massive unknown world was rapidly decreasing; twenty hours and it was so far away as to be invisible, though its effect was still great; forty hours and the effect was slight; sixty hours and the Skylark was out of range of the slightest measurable force of the monster it had left.

Hurtled onward by the inconceivable power of the unleashed copper demon in its center, the Skylark flew through the infinite reaches of interstellar space with an unthinkable, almost incalculable velocity —beside which the velocity of light was as that of a snail to that of a rifle bullet; a velocity augmented every second by a quantity almost double that of light itself.

CHAPTER XI

Through Space Into the Carboniferous

Seaton opened his eyes and gazed about him wonderingly. Only half conscious, bruised and sore in every part of his body, he could not at first realize what had happened. Instinctively drawing a deep breath, he coughed and choked as the undiluted oxygen filled his lungs, bringing with it a complete understanding of the situation. Knowing from the lack of any apparent motion that the power had been sufficient to pull the car away from that fatal globe, his first thought was for Dorothy, and he tore off his helmet and turned toward her. The force of even that slight movement, wafted him gently into the air where he hung suspended several minutes before his struggles enabled him to clutch a post and draw himself down to

the floor. A quick glance around informed him that Dorothy, as well as the others, was still unconscious. Making his way rapidly to her, he placed her face downward upon the floor and began artificial respiration. Very soon he was rewarded by the coughing he had longed to hear. He tore off her helmet and clasped her to his breast in an agony of relief, while she sobbed convulsively upon his shoulder. The first ecstasy of their greeting over, Dorothy started guiltily.

"Oh, Dick!" she exclaimed. "How about Peggy? You must see how she is!"

"Never mind," answered Crane's voice cheerily. "She is coming to nicely."

Glancing around quickly, they saw that Crane had already revived the stranger, and that DuQuesne was not in sight. Dorothy blushed, the vivid wave of color rising to her glorious hair, and hastily disengaged her arms from around her lover's neck, drawing away from him. Seaton, also blushing, dropped his arms, and Dorothy floated away from him, frantically clutching at a brace just beyond reach.

"Pull me down, Dick!" she called, laughing gaily.

Seaton, seizing her instinctively, neglected his own anchorage and they hung in the air together, while Crane and Margaret, each holding a strap, laughed with unrestrained merriment.

"Tweet, tweet—I'm a canary!" chuckled Seaton. "Throw us a rope!"

"A Dicky-bird, you mean," interposed Dorothy.

"I knew that you were a sleight-of-hand expert, Dick, but I did not know that levitation was one of your specialties," remarked Crane with mock gravity. "That is a peculiar pose you are holding now. What are you doing—sitting on an imaginary pedestal?"

"I'll be sitting on your neck if you don't get a wiggle on with that rope!" retorted Seaton, but before Crane had time to obey the command the floating couple had approached close enough to the

ceiling so that Seaton, with a slight pressure of his hand against the leather, sent them floating back to the floor, within reach of one of the handrails.

Seaton made his way to the power-plant, lifted in one of the remaining bars, and applied a little power. The Skylark seemed to jump under them, then it seemed as though they were back on Earth —everything had its normal weight once more, as the amount of power applied was just enough to equal the acceleration of gravity. After this fact had been explained, Dorothy turned to Margaret.

"Now that we are able to act intelligently, the party should be introduced to each other. Peggy, this is Dr. Dick Seaton, and this is Mr. Martin Crane. Boys, this is Miss Margaret Spencer, a dear friend of mine. These are the boys I have told you so much about, Peggy. Dick knows all about atoms and things; he found out how to make the Skylark go. Martin, who is quite a wonderful inventor, made the engines and things for it."

"I may have heard of Mr. Crane," replied Margaret eagerly. "My father was an inventor, and I have heard him speak of a man named Crane who invented a lot of instruments for airplanes. He used to say that the Crane instruments revolutionized flying. I wonder if you are that Mr. Crane?"

"That is rather unjustifiably high praise, Miss Spencer," replied Crane, "but as I have been guilty of one or two things along that line, I may be the man he meant."

"Pardon me if I seem to change the subject," put in Seaton, "but where's DuQuesne?"

"We came to at the same time, and he went into the galley to fix up something to eat."

"Good for him!" exclaimed Dorothy. "I'm simply starved to death. I would have been demanding food long ago, but I have so many aches and pains that I didn't realize how hungry I was until you mentioned it. Come on, Peggy, I know where our room is. Let's go powder our noses while these bewhiskered gentlemen reap their

beards. Did you bring along any of my clothes, Dick, or did you forget them in the excitement?"

"I didn't think anything about clothes, but Martin did. You'll find your whole wardrobe in your room. I'm with you, Dot, on that eating proposition—I'm hungry enough to eat the jamb off the door!"

After the girls had gone, Seaton and Crane went to their rooms, where they exercised vigorously to restore the circulation to their numbed bodies, shaved, bathed, and returned to the saloon feeling like new men. They found the girls already there, seated at one of the windows.

"Hail and greeting!" cried Dorothy at sight of them. "I hardly recognized you without your whiskers. Do hurry over here and look out this perfectly wonderful window. Did you ever in your born days see anything like this sight? Now that I'm not scared pea-green, I can enjoy it thoroughly!"

The two men joined the girls and peered out into space through the window, which was completely invisible, so clear was the glass. As the four heads bent, so close together, an awed silence fell upon the little group. For the blackness of the interstellar void was not the dark of an earthly night, but the absolute black of the absence of all light, beside which the black of platinum dust is pale and gray; and laid upon this velvet were the jewel stars. They were not the twinkling, scintillating beauties of the earthly sky, but minute points, so small as to seem dimensionless, yet of dazzling brilliance. Without the interference of the air, their rays met the eye steadily and much of the effect of comparative distance was lost. All seemed nearer and there was no hint of familiarity in their arrangement. Like gems thrown upon darkness they shone in multi-colored beauty upon the daring wanderers, who stood in their car as easily as though they were upon their parent Earth, and gazed upon a sight never before seen by eye of man nor pictured in his imaginings.

Through the daze of their wonder, a thought smote Seaton like a blow from a fist. His eyes leaped to the instrument board and he exclaimed:

"Look there, Mart! We're heading almost directly away from the Earth, and we must be making billions of miles per second. After we lost consciousness, the attraction of that big dud back there would swing us around, of course, but the bar should have stayed pointed somewhere near the Earth, as I left it. Do you suppose it could have shifted the gyroscopes?"

"It not only could have, it did," replied Crane, turning the bar until it again pointed parallel with the object-compass which bore upon the Earth. "Look at the board. The angle has been changed through nearly half a circumference. We couldn't carry gyroscopes heavy enough to counteract that force."

"But they were heavier there—Oh, sure, you're right. It's mass, not weight, that counts. But we sure are in one fine, large jam now. Instead of being half-way back to the Earth we're—where are we, anyway?"

They made a reading on an object-compass focused upon the Earth. Seaton's face lengthened as seconds passed. When it had come to rest, both men calculated the distance.

"What d'you make it, Mart? I'm afraid to tell you my result."

"Forty-six point twenty-seven light-centuries," replied Crane, calmly. "Right?"

"Right, and the time was 11:32 P. M. of Thursday, by the chronometer there. We'll time it again after a while and see how fast we're traveling. It's a good thing you built the ship's chronometers to stand any kind of stress. My watch is a total loss. Yours is, too?"

"All of our watches must be broken. We will have to repair them as soon as we get time."

"Well, let's eat next! No human being can stand my aching void much longer. How about you, Dot?"

"Yes, for Cat's sake, let's get busy!" she mimicked him gaily. "Doctor DuQuesne's had dinner ready for ages, and we're all dying by inches of hunger."

The wanderers, battered, bruised, and sore, seated themselves at a folding table, Seaton keeping a watchful eye upon the bar and upon the course, while enjoying Dorothy's presence to the full. Crane and Margaret talked easily, but at intervals. Save when directly addressed. DuQuesne maintained silence—not the silence of one who knows himself to be an intruder, but the silence of perfect self-sufficiency. The meal over, the girls washed the dishes and busied themselves in the galley. Seaton and Crane made another observation upon the Earth, requesting DuQuesne to stay out of the "engine room" as they called the partially-enclosed space surrounding the main instrument board, where were located the object-compasses and the mechanism controlling the attractor, about which DuQuesne knew nothing. As they rejoined DuQuesne in the main compartment, Seaton said:

"DuQuesne, we're nearly five thousand light-years away from the Earth, and are getting farther at the rate of about one light-year per minute."

"I suppose that it would be poor technique to ask how you know?"

"It would—very poor. Our figures are right. The difficulty is that we have only four bars left—enough to stop us and a little to spare, but not nearly enough to get back with, even if we could take a chance on drifting straight that far without being swung off—which, of course, is impossible."

"That means that we must land somewhere and dig some copper, then."

"Exactly.

"The first thing to do is to find a place to land."

Seaton picked out a distant star in their course and observed it through the spectroscope. Since it was found to contain copper in notable amounts, all agreed that its planets probably also contained copper.

"Don't know whether we can stop that soon or not," remarked Seaton as he set the levers, "but we may as well have something to shoot at. We'd better take our regular twelve-hour tricks, hadn't we, Mart? It's a wonder we got as far as this without striking another snag. I'll take the first trick at the board—beat it to bed."

"Not so fast, Dick," argued Crane, as Seaton turned toward the engine-room: "It's my turn."

"Flip a nickel," suggested Seaton. "Heads I get it."

Crane flipped a coin. Heads it was, and the worn-out party went to their rooms, all save Dorothy, who lingered after the others to bid her lover a more intimate good-night.

Seated beside him, his arm around her and her head upon his shoulder, Dorothy exclaimed:

"Oh, Dicky, Dicky, it is wonderful to be with you again! I've lived as many years in the last week as we have covered miles!"

Seaton kissed her with ardor, then turned her fair face up to his and gazed hungrily at every feature.

"It sure was awful until we found you, sweetheart girl. Those two days at Wilson's were the worst and longest I ever put in. I could have wrung Martin's cautious old neck!

"But isn't he a wiz at preparing for trouble? We sure owe him a lot, little dimpled lady."

Dorothy was silent for a moment, then a smile quirked at one corner of her mouth and a dimple appeared. Seaton promptly kissed it, whereupon it deepened audaciously.

"What are you thinking about—mischief?" he asked.

"Only of how Martin is going to be paid what we owe him," she answered teasingly. "Don't let the debt worry you any."

"Spill the news, Reddy," he commanded, as his arm tightened about her.

She stuck out a tiny tip of red tongue at him.

"Don't let Peggy find out he's a millionaire."

"Why not?" he asked wonderingly, then he saw her point and laughed:

"You little matchmaker!"

"I don't care, laugh if you want to. Martin's as nice a man as I know, and Peggy's a real darling. Don't you let slip a word about Martin's money, that's all!"

"She wouldn't think any less of him, would she?"

"Dick, sometimes you are absolutely dumb. It would spoil everything. If she knew he was a millionaire she would be scared to death—not of him, of course, but because she would think that he would think that she was chasing him, and then of course he would think that she was, see? As it is, she acts perfectly natural, and so does he. Didn't you notice that while we were eating they talked together for at least fifteen minutes about her father's invention and the way they stole the plans and one thing and another? I don't believe he has talked that much to any girl except me the last five years—and he wouldn't talk to me until he knew that I couldn't see any man except you. Much as we like Martin, we've got to admit that about him. He's been chased so much that he's wild. If any other girl he knows had talked to him that long, he would have been off to the North Pole or somewhere the next morning, and the best part of it is that he didn't think anything of it."

"You think she is domesticating the wild man?"

"Now, Dick, don't be foolish. You know what I mean. Martin is a perfect dear, but if she knew that he is *the* M. Reynolds Crane, everything would be ruined. You know yourself how horribly hard it is to get through his shell to the real Martin underneath. He is lonely and miserable inside, I know, and the right kind of girl, one that would treat him right, would make life Heaven for him, and herself too."

"Yes, and the wrong kind would make it...."

"She would," interrupted Dorothy hastily, "but Peggy's the right kind. Wouldn't it be fine to have Martin and Peggy as happy, almost, as you and I are?"

"All right, girlie, I'm with you," he answered, embracing her as though he intended never to let her go, "but you'd better go get some sleep—you're all in."

Considerably later, when Dorothy had finally gone, Seaton settled himself for the long vigil. Promptly at the end of the twelve hours Crane appeared, alert of eye and of bearing.

"You look fresh as a daisy, Mart. Feeling fit?"

"Fit as the proverbial fiddle. I could not have slept any better or longer if I had had a week off. Seven hours and a half is a luxury, you know."

"All wrong, old top. I need eight every night, and I'm going to take about ten this time."

"Go to it, twelve if you like. You have earned it."

Seaton stumbled to his room and slept as though in a trance for ten hours. Rising, he took his regular morning exercises and went into the saloon. All save Martin were there, but he had eyes only for his sweetheart, who was radiantly beautiful in a dress of deep bronze-brown.

"Good morning, Dick," she hailed him joyously. "You woke up just in time—we are all starving again, and were just going to eat without you!"

"Good morning, everybody. I would like to eat with you, Dottie, but I've got to relieve Martin. How'd it be for you to bring breakfast into the engine room and cheer my solitude, and let Crane eat with the others?"

"Fine—that's once you had a good idea, if you never have another!"

After the meal DuQuesne, who abhorred idleness with all his vigorous nature, took the watches of the party and went upstairs to the "shop," which was a completely-equipped mechanical laboratory, to repair them. Seaton stayed at the board, where Dorothy joined him as a matter of course. Crane and Margaret sat down at one of the windows.

She told him her story, frankly and fully, shuddering with horror as she recalled the awful, helpless fall, during which Perkins had met his end.

"Dick and I have a heavy score to settle with that Steel crowd and with DuQuesne," Crane said slowly. "We have no evidence that will hold in law, but some day DuQuesne will over-reach himself. We could convict him of abduction now, but the penalty for that is too mild for what he has done. Perkins' death was not murder, then?"

"Oh, no, it was purely self-defense. Perkins would have killed him if he could. And he really deserved it—Perkins was a perfect fiend. The Doctor, as they call him, is no better, although entirely different. He is so utterly heartless and ruthless, so cold and scientific. Do you know him very well?"

"We know all that about him, and more. And yet Dorothy said he saved her life?"

"He did, from Perkins, but I still think it was because he didn't want Perkins meddling in his affairs. He seems to me to be the very incarnation of a fixed purpose—to advance himself in the world."

"That expresses my thoughts exactly. But he slips occasionally, as in this instance, and he will again. He will have to walk very carefully while he is with us. Nothing would please Dick better than an excuse

for killing him, and I must admit that I feel very much the same way."

"Yes, all of us do, and the way he acts proves what a machine he is. He knows just exactly how far to go, and never goes beyond it."

They felt the Skylark lurch slightly.

"Oh, Mart!" called Seaton. "Going to pass that star we were headed for—too fast to stop. I'm giving it a wide berth and picking out another one. There's a big planet a few million miles off in line with the main door, and another one almost dead ahead—that is, straight down. We sure are traveling. Look at that sun flit by!"

They saw the two planets, one like a small moon, the other like a large star, and saw the strange sun increase rapidly in size as the Skylark flew on at such a pace that any earthly distance would have been covered as soon as it was begun. So appalling was their velocity that their ship was bathed in the light of that sun for only a short time, then was again surrounded by the indescribable darkness. Their seventy-two-hour flight without a pilot had seemed a miracle, now it seemed entirely possible that they might fly in a straight line for weeks without encountering any obstacle, so vast was the emptiness in comparison with the points of light that punctuated it. Now and then they passed so close to a star that it apparently moved rapidly, but for the most part the silent sentinels stood, like distant mountain peaks to the travelers in an express train, in the same position for many minutes.

Awed by the immensity of the universe, the two at the window were silent, not with the silence of embarrassment, but with that of two friends in the presence of something beyond the reach of words. As they stared out into the infinity each felt as never before the pitiful smallness of even our whole solar system and the utter insignificance of human beings and their works. Silently their minds reached out to each other in mutual understanding.

Unconsciously Margaret half shuddered and moved closer to her companion, the movement attracting his attention but not her own. A tender expression came into Crane's steady blue eyes as he looked down at the beautiful young woman by his side. For beautiful she undoubtedly was. Untroubled rest and plentiful food had erased the marks of her imprisonment; Dorothy's deep, manifestly unassumed faith in the ability of Seaton and Crane to bring them safely back to Earth had quieted her fears; and a complete costume of Dorothy's simple but well-cut clothes, which fitted her perfectly, and in which she looked her best and knew it, had completely restored her self-possession. He quickly glanced away and again gazed at the stars, but now, in addition to the wonders of space, he saw masses of wavy black hair, high-piled upon a queenly head; deep down brown eyes half veiled by long, black lashes; sweet, sensitive lips; a firmly rounded but dimpled chin; and a perfectly-formed young body.

After a time she drew a deep, tremulous breath. As he turned, her eyes met his. In their shadowy depths, still troubled by the mystery of the unknowable, he read her very soul—the soul of a real woman.

"I had hoped," said Margaret slowly, "to take a long flight above the clouds, but anything like this never entered my mind. How unbelievably great it is! So much vaster than any perception we could get upon earth! It seems strange that we were ever awed by the sea or the mountains ... and yet...."

She paused, with her lip caught under two white teeth, then went on hesitatingly:

"Doesn't it seem to you, Mr. Crane, that there is something in man as great as all this? Otherwise, Dorothy and I could not be sailing here in a wonder like the Lark, which you and Dick Seaton have made."

Since from the first, Dorothy had timed her waking hours with those of Seaton—waiting upon him, preparing his meals, and lightening the long hours of his vigils at the board—Margaret took it upon

herself to do the same thing for Crane. But often they assembled in the engine-room, and there was much fun and laughter, as well as serious talk, among the four. Margaret was quickly accepted as a friend, and proved a delightful companion. Her wavy, jet-black hair, the only color in the world that could hold its own with Dorothy's auburn glory, framed features self-reliant and strong, yet of womanly softness; and in this genial atmosphere her quick tongue had a delicate wit and a facility of expression that delighted all three. Dorothy, after the manner of Southern women, became the hostess of this odd "party," as she styled it, and unconsciously adopted the attitude of a lady in her own home.

Early in their flight, Crane suggested that they should take notes upon the systems of stars through which were passing.

"I know very little of astronomy," he said to Seaton, "but with our telescope, spectroscope, and other instruments, we should be able to take some data that will be of interest to astronomers. Possibly Miss Spencer would be willing to help us?"

"Sure," Seaton returned readily. "We'd be idiots to let a chance like this slide. Go to it!"

Margaret was delighted at the opportunity to help.

"Taking notes is the best thing I do!" she cried, and called for a pad and pencil.

Stationed at the window, they fell to work in earnest. For several hours Crane took observations, calculated distances, and dictated notes to Margaret.

"The stars are wonderfully different!" she exclaimed to him once. "That planet, I'm sure, has strange and lovely life upon it. See how its color differs from most of the others we have seen so near? It is rosy and soft like a home fire. I'm sure its people are happy."

They fell into a long discussion, laughing a little at their fancies. Were these multitudes of worlds peopled as the Earth? Could it be that only upon Earth had occurred the right combination for the generation of life, so that the rest of the Universe was unpeopled?

"It is unthinkable that they are all uninhabited," mused Crane. "There must be life. The beings may not exist in any form with which we are familiar—they may well be fulfilling some purpose in ways so different from ours that we should be unable to understand them at all."

Margaret's eyes widened in startled apprehension, but in a moment she shook herself and laughed.

"But there's no reason to suppose they would be awful," she remarked, and turned with renewed interest to the window.

Thus days went by and the Skylark passed one solar system after another, with a velocity so great that it was impossible to land upon any planet. Margaret's association with Crane, begun as a duty, soon became an intense pleasure for them both. Taking notes or seated at the board in companionable conversation or sympathetic silence, they compressed into a few days more real companionship than is ordinarily enjoyed in months. Oftener and oftener, as time went on, Crane found the vision of his dream home floating in his mind as he steered the Skylark in her meteoric flight or as he strapped himself into his narrow bed. Now, however, the central figure of the vision, instead of being an indistinct blur, was clear and sharply defined. And for her part, more and more was Margaret drawn to the quiet and unassuming, but utterly dependable and steadfast young inventor, with his wide knowledge and his keen, incisive mind.

Sometimes, when far from any star, the pilot would desert his post and join the others at meals. Upon one such occasion Seaton asked:

"How's the book on astronomy, oh, learned ones?"

"It will be as interesting as Egyptian hieroglyphics," Margaret replied, as she opened her notebook and showed him pages of figures and symbols.

"May I see it, Miss Spencer?" asked DuQuesne from across the small table, extending his hand.

She looked at him, hot hostility in her brown eyes, and he dropped his hand.

"I beg your pardon," he said, with amused irony.

After the meal Seaton and Crane held a short consultation, and the former called to the girls, asking them to join in the "council of war." There was a moment's silence before Crane said diffidently:

"We have been talking about DuQuesne, Miss Spencer, trying to decide a very important problem."

Seaton smiled in spite of himself as the color again deepened in Margaret's face, and Dorothy laughed outright.

"Talk about a red-headed temper! Your hair must be dyed, Peggy!"

"I know I acted like a naughty child," Margaret said ruefully, "but he makes me perfectly furious and scares me at the same time. A few more remarks like that 'I beg your pardon' of his and I wouldn't have a thought left in my head!"

Seaton, who had opened his mouth, shut it again ludicrously, without saying a word, and Margaret gave him a startled glance.

"Now I *have* said it!" she exclaimed. "I'm not afraid of him, boys, really. What do you want me to do?"

Seaton plunged in.

"What we were trying to get up nerve enough to say is that he'd be a good man on the astronomy job," and Crane added quickly:

"He undoubtedly knows more about it than I do, and it would be a pity to lose the chance of using him. Besides, Dick and I think it rather dangerous to leave him so much time to himself, in which to work up a plan against us."

"He's cooking one right now, I'll bet a hat," Seaton put in, and Crane added:

"If you are sure that you have no objections, Miss Spencer, we might go below, where we can have it dark, and all three of us see what we

can make of the stargazing. We are really losing an unusual opportunity."

Margaret hid gallantly any reluctance she might have felt.

"I wouldn't deserve to be here if I can't work with the Doctor and hate him at the same time."

"Good for you, Peg, you're a regular fellow!" Seaton exclaimed. "You're a trump!"

Finally, the enormous velocity of the cruiser was sufficiently reduced to effect a landing, a copper-bearing sun was located, and a course was laid toward its nearest planet.

As the vessel approached its goal a deep undercurrent of excitement kept all the passengers feverishly occupied. They watched the distant globe grow larger, glowing through its atmosphere more and more clearly as a great disk of white light, its outline softened by the air about it. Two satellites were close beside it. Its sun, a great, blazing orb, a little nearer than the planet, looked so great and so hot that Margaret became uneasy.

"Isn't it dangerous to get so close, Dick? We might burn up, mightn't we?"

"Not without an atmosphere," he laughed.

"Oh," murmured the girl apologetically, "I might have known that."

Dropping rapidly into the atmosphere of the planet, they measured its density and analyzed it in apparatus installed for that purpose, finding that its composition was very similar to the Earth's air and that its pressure was not enough greater to be uncomfortable. When within one thousand feet of the surface, Seaton weighed a five-pound weight upon a spring-balance, finding that it weighed five and a half pounds, thus ascertaining that the planet was either somewhat larger than the Earth or more dense. The ground was

almost hidden by a rank growth of vegetation, but here and there appeared glade-like openings.

Seaton glanced at the faces about him. Tense interest marked them all. Dorothy's cheeks were flushed, her eyes shone. She looked at him with awe and pride.

"A strange world, Dorothy," he said gravely. "You are not afraid?"

"Not with you," she answered. "I am only thrilled with wonder."

"Columbus at San Salvador," said Margaret, her dark eyes paying their tribute of admiration.

A dark flush mounted swiftly into Seaton's brown face and he sought to throw most of the burden upon Crane, but catching upon his face also a look of praise, almost of tenderness, he quickly turned to the controls.

"Man the boats!" he ordered an imaginary crew, and the Skylark descended rapidly.

Landing upon one of the open spaces, they found the ground solid and stepped out. What had appeared to be a glade was in reality a rock, or rather, a ledge of apparently solid metal, with scarcely a loose fragment to be seen. At one end of the ledge rose a giant tree wonderfully symmetrical, but of a peculiar form. Its branches were longer at the top than at the bottom, and it possessed broad, dark-green leaves, long thorns, and odd, flexible, shoot-like tendrils. It stood as an outpost of the dense vegetation beyond. Totally unlike the forests of Earth were those fern-like trees, towering two hundred feet into the air. They were of an intensely vivid green and stood motionless in the still, hot air of noonday. Not a sign of animal life was to be seen; the whole landscape seemed asleep.

The five strangers stood near their vessel, conversing in low tones and enjoying the sensation of solid ground beneath their feet. After a few minutes DuQuesne remarked:

"This is undoubtedly a newer planet than ours. I should say that it was in the Carboniferous age. Aren't those trees like those in the

coal-measures, Seaton?"

"True as time, Blackie—there probably won't be a human race here for ages, unless we bring out some colonists."

Seaton kicked at one of the loose lumps of metal questioningly with his heavy shoe, finding that it was as immovable as though it were part of the ledge. Bending over, he found that it required all his great strength to lift it and he stared at it with an expression of surprise, which turned to amazement as he peered closer.

"DuQuesne! Look at this!"

DuQuesne studied the metal, and was shaken out of his habitual taciturnity.

"Platinum, by all the little gods!"

"We'll grab some of this while the grabbing's good," announced Seaton, and the few visible lumps were rolled into the car. "If we had a pickaxe we could chop some more off one of those sharp ledges down there."

"There's an axe in the shop," replied DuQuesne. "I'll go get it. Go ahead, I'll soon be with you."

"Keep close together," warned Crane as the four moved slowly down the slope. "This is none too safe, Dick."

"No, it isn't, Mart. But we've got to see whether we can't find some copper, and I would like to get some more of this stuff, too. I don't think it's platinum, I believe that it's X."

As they reached the broken projections, Margaret glanced back over her shoulder and screamed. The others saw that her face was white and her eyes wide with horror, and Seaton instinctively drew his pistol as he whirled about, only to check his finger on the trigger and lower his hand.

"Nothing but X-plosive bullets," he growled in disgust, and in helpless silence the four watched an unspeakably hideous monster slowly appear from behind the Skylark. Its four huge, squat legs supported a body at least a hundred feet long, pursy and ungainly; at the extremity of a long and sinuous neck a comparatively small head seemed composed entirely of a cavernous mouth armed with row upon row of carnivorous teeth. Dorothy gasped with terror and both girls shrank closer to the two men, who maintained a baffled silence as the huge beast passed his revolting head along the hull of the vessel.

"I dare not shoot, Martin," Seaton whispered, "it would wreck the bus. Have you got any solid bullets?"

"No. We must hide behind these small ledges until it goes away," answered Crane, his eyes upon Margaret's colorless face. "You two hide behind that one, we will take this one."

"Oh, well, it's nothing to worry about, anyway. We can kill him as soon as he gets far enough away from the boat," said Seaton as, with Dorothy clinging to him, he dropped behind one of the ledges. Margaret, her staring eyes fixed upon the monster, remained standing until Crane touched her gently and drew her down beside him.

"He will go away soon," his even voice assured her. "We are in no danger."

In spite of their predicament, a feeling of happiness flowed through Crane's whole being as he crouched beside the wall of metal with one arm protectingly around Margaret, and he longed to protect her through life as he was protecting her then. Accustomed as he was to dangerous situations, he felt no fear. He felt only a great tenderness for the girl by his side, who had ceased trembling but was still staring wide-eyed at the monster through a crevice.

"Scared, Peggy?" he whispered.

"Not now, Martin, but if you weren't here I would die of fright."

At this reply his arm tightened involuntarily, but he forced it to relax.

"It will not be long," he promised himself silently, "until she is back at home among her friends, and then...."

There came the crack of a rifle from the Skylark. There was an awful roar from the dinosaur, which was quickly silenced by a stream of machine-gun bullets.

"Blackie's on the job—let's go!" cried Seaton, and they raced up the slope. Making a detour to avoid the writhing and mutilated mass they plunged through the opening door. DuQuesne shut it behind them and in overwhelming relief, the adventurers huddled together as from the wilderness without there arose an appalling tumult.

The scene, so quiet a few moments before, was instantly changed. The trees, the swamp, and the air seemed filled with monsters so hideous as to stagger the imagination. Winged lizards of prodigious size hurtled through the air, plunging to death against the armored hull. Indescribable flying monsters, with feathers like birds, but with the fangs of tigers, attacked viciously. Dorothy screamed and started back as a scorpion-like thing with a body ten feet in length leaped at the window in front of her, its terrible sting spraying the glass with venom. As it fell to the ground, a huge spider—if an eight-legged creature with spines instead of hair, many-faceted eyes, and a bloated, globular body weighing hundreds of pounds, may be called a spider—leaped upon it and, mighty mandibles against poisonous sting, the furious battle raged. Several twelve-foot cockroaches climbed nimbly across the fallen timber of the morass and began feeding voraciously upon the body of the dead dinosaur, only to be driven away by another animal, which all three men recognized instantly as that king of all prehistoric creatures, the saber-toothed tiger. This newcomer, a tawny beast towering fifteen feet high at the shoulder, had a mouth disproportionate even to his great size—a mouth armed with four great tiger-teeth more than three feet in length. He had barely begun his meal, however, when

he was challenged by another nightmare, a something apparently half-way between a dinosaur and a crocodile. At the first note the tiger charged. Clawing, striking, rending each other with their terrible teeth, a veritable avalanche of bloodthirsty rage, the combatants stormed up and down the little island. But the fighters were rudely interrupted, and the earthly visitors discovered that in this primitive world it was not only animal life that was dangerous.



The great tree standing on the farther edge of the island suddenly bent over, lashing out like a snake and grasping both. It transfixed them with the terrible thorns, which were now seen to be armed with needlepoints and to possess barbs like fish-hooks.

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them with the terrible thorns, which were now seen to be armed with needlepoints and to possess barbs like fish-hooks. It ripped at them with the long branches, which were veritable spears. The broad leaves, armed with revolting sucking disks, closed about the two animals, while the long, slender twigs, each of which was now seen to have an eye at its extremity, waved about, watching each movement of the captives from a safe distance.

If the struggle between the two animals had been awful, this was Titanic. The air was torn by the roars of the reptile, the screams of the great cat, and the shrieks of the tree. The very ground rocked with the ferocity of the conflict. There could be but one result—soon the tree, having absorbed the two gladiators, resumed its upright position in all its beauty.

The members of the little group stared at each other, sick at heart.

"This is NO place to start a copper-mine. I think we'd better beat it," remarked Seaton presently, wiping drops of perspiration from his forehead.

"I think so," acquiesced Crane. "We found air and Earth-like conditions here; we probably will elsewhere."

"Are you all right, Dottie?" asked Seaton.

"All right, Dicky," she replied, the color flowing back into her cheeks. "It scared me stiff, and I think I have a lot of white hairs right now, but I wouldn't have missed it for anything."

She paused an instant, and continued:

"Dick, there must be a queer streak of brutality in me, but would you mind blowing up that frightful tree? I wouldn't mind its nature if it were ugly—but look at it! It's so deceptively beautiful! You wouldn't think it had the disposition of a fiend, would you?"

A general laugh relieved the nervous tension, and Seaton stepped impulsively toward DuQuesne with his hand outstretched.

"You've squared your account, Blackie. Say the word and the war's all off."

DuQuesne ignored the hand and glanced coldly at the group of eager, friendly faces.

"Don't be sentimental," he remarked evenly as he turned away to his room. "Emotional scenes pain me. I gave my word to act as one of the party."

"Well, may I be kicked to death by little red spiders!" exclaimed Seaton, dumbfounded, as the other disappeared. "He ain't a man, he's a fish!"

"He's a machine. I always thought so, and now I know it," stated Margaret, and the others nodded agreement.

"Well, we'll sure pull his cork as soon as we get back!" snapped Seaton. "He asked for it, and we'll give him both barrels!"

"I know I acted the fool out there," Margaret apologized, flushing hotly and looking at Crane. "I don't know what made me act so stupid. I used to have a little nerve."

"You were a regular little brick, Peg," Seaton returned instantly. "Both you girls are all to the good—the right kind to have along in ticklish places."

Crane held out his steady hand and took Margaret's in a warm clasp.

"For a girl in your weakened condition you were wonderful. You have no reason to reproach yourself."

Tears filled the dark eyes, but were held back bravely as she held her head erect and returned the pressure of his hand.

"Just so you don't leave me behind next time," she returned lightly, and the last word concerning the incident had been said.

Seaton applied the power and soon they were approaching another planet, which was surrounded by a dense fog. Descending slowly, they found it to be a mass of boiling-hot steam and rank vapors, under enormous pressure.

The next planet they found to have a clear atmosphere, but the ground had a peculiar, barren look; and analysis of the gaseous envelope proved it to be composed almost entirely of chlorin. No life of an earthly type could be possible upon such a world, and a search for copper, even with the suits and helmets, would probably be fruitless if not impossible.

"Well," remarked Seaton as they were again in space, "we've got enough copper to visit several more worlds—several more solar systems, if necessary. But there's a nice, hopeful-looking planet right in front of us. It may be the one we're looking for."

Arrived in the belt of atmosphere, they tested it as before, and found it satisfactory.

CHAPTER XII

The Mastery of Mind Over Matter

They descended rapidly, directly over a large and imposing city in the middle of a vast, level, beautifully-planted plain. While they were watching it, the city vanished and the plain was transformed into a heavily-timbered mountain summit, the valleys falling away upon all sides as far as the eye could reach.

"Well, I'll say that's SOME mirage!" exclaimed Seaton, rubbing his eyes in astonishment. "I've seen mirages before, but never anything like that. Wonder what this air's made of? But we'll land, anyway, if we finally have to swim!"

The ship landed gently upon the summit, the occupants half expecting to see the ground disappear before their eyes. Nothing happened, however, and they disembarked, finding walking somewhat difficult because of the great mass of the planet. Looking around, they could see no sign of life, but they *felt* a presence near them—a vast, invisible something.

Suddenly, out of the air in front of Seaton, a man materialized: a man identical with him in every feature and detail, even to the smudge of grease under one eye, the small wrinkles in his heavy blue serge suit, and the emblem of the American Chemical Society upon his watch-fob.

"Hello, folks," the stranger began in Seaton's characteristic careless speech. "I see you're surprised at my knowing your language. You're a very inferior race of animals—don't even understand telepathy, don't understand the luminiferous ether, or the relation between time and space. Your greatest things, such as the Skylark and your object-compass, are merely toys."

Changing instantly from Seaton's form to that of Dorothy, likewise a perfect imitation, the stranger continued without a break:

"Atoms and electrons and things, spinning and whirling in their dizzy little orbits...." It broke off abruptly, continuing in the form of DuQuesne:

"Couldn't make myself clear as Miss Vaneman—not a scientific convolution in her foolish little brain. You are a freer type, DuQuesne, unhampered by foolish, soft fancies. But you are very clumsy, although working fairly well with your poor tools—Brookings and his organization, the Perkins Café and its clumsy wireless telephones. All of you are extremely low in the scale. Such animals have not been known in our universe for ten million years, which is as far back as I can remember. You have millions of years to go before you will amount to anything; before you will even rise above death and its attendant necessity, sex."

The strange being then assumed form after form with bewildering rapidity, while the spectators stared in dumb astonishment. In rapid succession it took on the likeness of each member of the party, of the vessel itself, of the watch in Seaton's pocket—reappearing as Seaton.

"Well, bunch," it said in a matter-of-fact voice, "there's no mental exercise in you and you're such a low form of life that you're of no use on this planet; so I'll dematerialize you."

A peculiar light came into its eyes as they stared intently into Seaton's, and he felt his senses reel under the impact of an awful mental force, but he fought back with all his power and remained standing.

"What's this?" the stranger demanded in surprise, "This is the first time in history that mere matter—which is only a manifestation of mind—has ever refused to obey mind. There's a screw loose somewhere."

"I must reason this out," it continued analytically, changing instantaneously into Crane's likeness. "Ah! I am not a perfect reproduction. This is the first matter I have ever encountered that I could not reproduce perfectly. There is some subtle difference. The external form is the same, the organic structure likewise. The molecules of substance are arranged as they should be, as are also the atoms in the molecule. The electrons in the atom—ah! There is the difficulty. The arrangement and number of electrons, as well as positive charges, are entirely different from what I had supposed. I must derive the formula."

"Let's go, folks!" said Seaton hastily, drawing Dorothy back toward the Skylark. "This dematerialization stunt may be play for him, but I don't want any of it in my family."

"No, you really *must* stay," remonstrated the stranger. "Much as it is against my principles to employ brute force, you must stay and be properly dematerialized, alive or dead. Science demands it."

As he spoke, he started to draw his automatic pistol. Being in Crane's form, he drew slowly, as Crane did; and Seaton, with the dexterity of much sleight-of-hand work and of years of familiarity with his weapon, drew and fired in one incredibly rapid movement, before the other had withdrawn the pistol from his pocket. The X-plosive shell completely volatilized the stranger and hurled the party backward toward the Skylark, into which they fled hastily. As Crane, the last one to enter the vessel, fired his pistol and closed the massive door, Seaton leaped to the levers. As he did so, he saw a

creature materialize in the air of the vessel and fall to the floor with a crash as he threw on the power. It was a frightful thing, like nothing ever before seen upon any world; with great teeth, long, sharp claws, and an automatic pistol clutched firmly in a human hand. Forced flat by the terrific acceleration of the vessel, it was unable to lift either itself or the weapon, and lay helpless.

"We take one trick, anyway!" blazed Seaton, as he threw on the power of the attractor and diffused its force into a screen over the party, so that the enemy could not materialize in the air above them and crush them by mere weight. "As pure mental force, you're entirely out of my class, but when you come down to matter, which I can understand, I'll give you a run for your money until my angles catch fire."

"That is a childish defiance. It speaks well for your courage, but ill for your intelligence," the animal said, and vanished.

A moment later Seaton's hair almost stood on end as he saw an automatic pistol appear upon the board directly in front of him, clamped to it by bands of steel. Paralyzed by this unlooked-for demonstration of the mastery of mind over matter, unable to move a muscle, he lay helpless, staring at the engine of death in front of him. Although the whole proceeding occupied only a fraction of a second, it seemed to Seaton as though he watched the weapon for hours. As the sleeve drew back, cocking the pistol and throwing a cartridge into the chamber, the trigger moved, and the hammer descended to speed on its way the bullet which was to blot out his life. There was a sharp click as the hammer fell—Seaton was surprised to find himself still alive until a voice spoke, apparently from the muzzle of the pistol, with the harsh sound of a metallic diaphragm.

"I was almost certain that it wouldn't explode," the stranger said, chattily. "You see, I haven't derived that formula yet, so I couldn't make a real explosive. I could of course, materialize beside you, under your protective screen, and crush you in a vise. I could materialize as a man of metal, able to stand up under this acceleration, and do you to death. I could even, by a sufficient

expenditure of mental energy, materialize a planet around your ship and crush it. However, these crude methods are distasteful in the extreme, especially since you have already given me some slight and unexpected mental exercise. In return, I shall give you one chance for your lives. I cannot dematerialize either you or your vessel until I work out the formula for your peculiar atomic structure. If I can derive the formula before you reach the boundaries of my home-space, beyond which I cannot go, I shall let you go free. Deriving the formula will be a neat little problem. It should be fairly easy, as it involves only a simple integration in ninety-seven dimensions."

Silence ensued, and Seaton advanced his lever to the limit of his ability to retain consciousness. Almost overcome by the horror of their position, in an agony of suspense, expecting every instant to be hurled into nothingness, he battled on, with no thought of yielding, even in the face of those overwhelming mental odds.

"You can't do it, old top," he thought savagely, concentrating all the power of his highly-trained mind against the intellectual monster. "You can't dematerialize us, and you can't integrate above ninety-five dimensions to save your neck. You can't do it—you're slipping—you're all balled up right now!"

For more than an hour the silent battle raged, during which time the Skylark flew millions upon millions of miles toward Earth. Finally the stranger spoke again.

"You three win," it said abruptly. In answer to the unspoken surprise of all three men it went on: "Yes, all three of you got the same idea and Crane even forced his body to retain consciousness to fight me. Your efforts were very feeble, of course, but were enough to interrupt my calculations at a delicate stage, every time. You are a low form of life, undoubtedly, but with more mentality than I supposed at first. I could get that formula, of course, in spite of you, if I had time, but we are rapidly approaching the limits of my territory, outside of which even I could not think my way back. That is one thing in which your mechanical devices are superior to

anything my own race developed before we became pure intellectuals. They point the way back to your Earth, which is so far away that even my mentality cannot grasp the meaning of the distance. I can understand the Earth, can visualize it from your minds, but I cannot project myself any nearer to it than we are at present. Before I leave you, I will say that you have conferred a real favor upon me—you have given me something to think about for thousands of cycles to come. Good-bye."

Assured that their visitor had really gone, Seaton reduced the power to that of gravity and Dorothy soon sat up, Margaret reviving more slowly.

"Dick," said Dorothy solemnly, "did that happen or have I been unconscious and just had a nightmare?"

"It happened, all right," returned her lover, wiping his brow in relief. "See that pistol clamped upon the top of the board? That's a token in remembrance of him."

Dorothy, though she had been only half conscious, had heard the words of the stranger. As she looked at the faces of the men, white and drawn with the mental struggle, she realized what they had gone through, and she drew Seaton down into one of the seats, stroking his hair tenderly.

Margaret went to her room immediately, and as she did not return, Dorothy followed. She came back presently with a look of concern upon her face.

"This life is a little hard on Peggy. I didn't realize how much harder for her it would be than it is for me until I went in there and found her crying. It is much harder for her, of course, since I am with you, Dick, and with you, Martin, whom I know so well. She must feel terribly alone."

"Why should she?" demanded Seaton. "We think she's some game little guy. Why, she's one of the bunch! She must know that!"

"Well, it isn't the same," insisted Dorothy. "You be extra nice to her, Dick. But don't you dare let her know I told you about the tears, or

she'd eat me alive!"

Crane said nothing—a not unusual occurrence—but his face grew thoughtful and his manner, when Margaret appeared at mealtime, was more solicitous than usual and more than brotherly in its tenderness.

"I shall be an interstellar diplomat," Dorothy whispered to Seaton as soon as they were alone. "Wasn't that a beautiful bee I put upon Martin?"

Seaton stared at her a moment, then shook her gently before he took her into his arms.

The information, however, did not prevent him from calling to Crane a few minutes later, even though he was still deep in conversation with Margaret. Dorothy gave him an exasperated glance and walked away.

"I sure pulled a boner that time," Seaton muttered as he plucked at his hair ruefully. "It nearly did us.

"Let's test this stuff out and see if it's X, Mart, while DuQuesne's out of the way. If it is X, it's SOME find!"

Seaton cut off a bit of metal with his knife, hammered it into a small piece of copper, and threw the copper into the power-chamber, out of contact with the plating. As the metal received the current the vessel started slightly.

"It *is* X! Mart, we've got enough of this stuff to supply three worlds!"

"Better put it away somewhere," suggested Crane, and after the metal had been removed to Seaton's cabin, the two men again sought a landing-place. Almost in their line of flight they saw a close cluster of stars, each emitting a peculiar greenish light which, in the spectroscope, revealed a blaze of copper lines.

"That's our meat, Martin. We ought to be able to grab some copper in that system, where there's so much of it that it colors their sunlight."

"The copper is undoubtedly there, but it might be too dangerous to get so close to so many suns. We may have trouble getting away."

"Well, our copper's getting horribly low. We've got to find some pretty quick, somewhere, or else walk back home, and there's our best chance. We'll feel our way along. If it gets too strong, we'll beat it."

When they had approached so close that the suns were great stars widely spaced in the heavens, Crane relinquished the controls to Seaton.

"If you will take the lever awhile, Dick, Margaret and I will go downstairs and see if we can locate a planet."

After a glance through the telescope, Crane knew that they were still too far from the group of suns to place any planet with certainty, and began taking notes. His mind was not upon his work, however, but was completely filled with thoughts of the girl at his side. The intervals between his comments became longer and longer until they were standing in silence, both staring with unseeing eyes out into the trackless void. But it was in no sense their usual companionable silence. Crane was fighting back the words he longed to say. This lovely girl was not here of her own accord—she had been torn forcibly from her home and from her friends, and he would not, could not, make her already difficult position even more unpleasant by forcing his attentions upon her. Margaret sensed something unusual and significant in his attitude and held herself tense, her heart beating wildly.

At that moment an asteroid came within range of the Skylark's watchful repeller, and at the lurch of the vessel, as it swung around the obstruction, Margaret would have fallen had not Crane instinctively caught her with one arm. Ordinarily this bit of courtesy would have gone unnoticed by both, as it had happened many times before, but in that heavily-charged atmosphere it took on a new

significance. Both blushed hotly, and as their eyes met each saw that which held them spellbound. Slowly, almost as if without volition, Crane put his other arm around her. A wave of deeper crimson swept over her face and she bent her handsome head as her slender body yielded to his arms with no effort to free itself. Finally Crane spoke, his usually even voice faltering.

"Margaret, I hope you will not think this unfair of me ... but we have been through so much together that I feel as though we had known each other forever. Until we went through this last experience I had intended to wait—but why should we wait? Life is not lived in years alone, and you know how much I love you, my dearest!" he finished, passionately.

Her arms crept up around his neck, her bowed head lifted, and her eyes looked deep into his as she whispered her answer:

"I think I do ... Oh, Martin!"

Presently they made their way back to the engine-room, keeping the singing joy in their hearts inaudible and the kisses fresh upon their lips invisible. They might have kept their secret for a time, had not Seaton promptly asked:

"Well, what did you find, Mart?"

A panicky look appeared upon Crane's self-possessed countenance and Margaret's fair face glowed like a peony.

"*Yes*, what *did* you find?" demanded Dorothy, as she noticed their confusion.

"My future wife," Crane answered steadily.

The two girls rushed into each other's arms and the two men silently gripped hands in a clasp of steel; for each of the four knew that these two unions were not passing fancies, lightly entered into and as lightly cast aside, but were true partnerships which would endure throughout the entire span of life.

A planet was located and the Skylark flew toward it. Discovering that it was apparently situated in the center of the cluster of suns, they hesitated; but finding that there was no dangerous force present, they kept on. As they drew nearer, so that the planet appeared as a very small moon, they saw that the Skylark was in a blaze of green light, and looking out of the windows, Crane counted seventeen great suns, scattered in all directions in the sky! Slowing down abruptly as the planet was approached, Seaton dropped the vessel slowly through the atmosphere, while Crane and DuQuesne tested and analyzed it.

"Pressure, thirty pounds per square inch. Surface gravity as compared to that of the Earth, two-fifths. Air-pressure about double that of the Earth, while a five-pound weight weighs only two pounds. A peculiar combination," reported Crane, and DuQuesne added:

"Analysis about the same as our air except for two and three-tenths per cent of a gas that isn't poisonous and which has a peculiar, fragrant odor. I can't analyze it and think it probably an element unknown upon Earth, or at least very rare."

"It would have to be rare if you don't know what it is," acknowledged Seaton, locking the Skylark in place and going over to smell the strange gas.

Deciding that the air was satisfactory, the pressure inside the vessel was slowly raised to the value of that outside and two doors were opened, to allow the new atmosphere free circulation.

Seaton shut off the power actuating the repeller and let the vessel settle slowly toward the ocean which was directly beneath them—an ocean of a deep, intense, wondrously beautiful blue, which the scientists studied with interest. Arrived at the surface, Seaton moistened a rod in a wave, and tasted it cautiously, then uttered a yell of joy—a yell broken off abruptly as he heard the sound of his own voice. Both girls started as the vibrations set up in the dense air smote upon their eardrums. Seaton moderated his voice and continued:

"I forgot about the air-pressure. But hurrah for this ocean—it's ammoniacal copper sulphate solution! We can sure get all the copper we want, right here, but it would take weeks to evaporate the water and recover the metal. We can probably get it easier ashore. Let's go!"

They started off just above the surface of the ocean toward the nearest continent, which they had observed from the air.

CHAPTER XIII

Nalboon of Mardonale

As the Skylark approached the shore, its occupants heard a rapid succession of heavy detonations, apparently coming from the direction in which they were traveling.

"Wonder what that racket is?" asked Seaton.

"It sounds like big guns," said Crane, and DuQuesne nodded agreement.

"Big guns is right. They're shooting high explosive shells, too, or I never heard any. Even allowing for the density of the air, that kind of noise isn't made by pop-guns."

"Let's go see what's doing," and Seaton started to walk toward one of the windows with his free, swinging stride. Instantly he was a-sprawl, the effort necessary to carry his weight upon the Earth's surface lifting him into the air in a succession of ludicrous hops, but he soon recovered himself and walked normally.

"I forgot this two-fifths gravity stuff," he laughed. "Walk as though we had only a notch of power on and it goes all right. It sure is funny to feel so light when we're so close to the ground."

He closed the doors to keep out a part of the noise and advanced the speed lever a little, so that the vessel tilted sharply under the pull of

the almost horizontal bar.

"Go easy," cautioned Crane. "We do not want to get in the way of one of their shells. They may be of a different kind than those we are familiar with."

"Right—easy it is. We'll stay forty miles above them, if necessary."

As the great speed of the ship rapidly lessened the distance, the sound grew heavier and clearer—like one continuous explosion. So closely did one deafening concussion follow another that the ear could not distinguish the separate reports.

"I see them," simultaneously announced Crane, who was seated at one of the forward windows searching the country with his binoculars, and Seaton, who, from the pilot's seat, could see in any direction.

The others hurried to the windows with their glasses and saw an astonishing sight.

"Aerial battleships, eight of 'em!" exclaimed Seaton, "as big as the Idaho. Four of 'em are about the same shape as our battleships. No wings—they act like helicopters."

"Four of them are battleships, right enough, but what about the other four?" asked DuQuesne. "They are not ships or planes or anything else that I ever heard of."

"They are animals," asserted Crane. "Machines never were and never will be built like that."

As the Skylark cautiously approached, it was evident to the watchers that four of the contestants were undoubtedly animals. Here indeed was a new kind of animal, an animal able to fight on even terms with a first-class battleship! Frightful aerial monsters they were. Each had an enormous, torpedo-shaped body, with scores of prodigiously long tentacles like those of a devil-fish and a dozen or more great, soaring wings. Even at that distance they could see the row of protruding eyes along the side of each monstrous body and the terrible, prow-like beaks tearing through the metal of the

warships opposing them. They could see, by the reflection of the light from the many suns, that each monster was apparently covered by scales and joints of some transparent armor. That it was real and highly effective armor there could be no doubt, for each battleship bristled with guns of heavy caliber and each gun was vomiting forth a continuous stream of fire. Shells bursting against each of the creatures made one continuous blaze, and the uproar was indescribable—an uninterrupted cataclysm of sound appalling in its intensity.

The battle was brief. Soon all four of the battleships had crumpled to the ground, their crews absorbed by the terrible sucking arms or devoured by the frightful beaks. They did not die in vain—three of the monsters had been blown to atoms by shells which had apparently penetrated their armor. The fourth was pursuing something, which Seaton now saw was a fleet of small airships, which had flown away from the scene of conflict. Swift as they were, the monster covered three feet to their one.

"We can't stand for anything like that," cried Seaton, as he threw on the power and the Skylark leaped ahead. "Get ready to bump him off, Mart, when I jerk him away. He acts hard-boiled, so give him a real one—fifty milligrams!"

Sweeping on with awful speed the monster seized the largest and most gaily decorated plane in his hundred-foot tentacles just as the Skylark came within sighting distance. In four practically simultaneous movements Seaton sighted the attractor at the ugly beak, released all its power, pointed the main bar of the Skylark directly upward, and advanced his speed lever. There was a crash of rending metal as the thing was torn loose from the plane and jerked a hundred miles into the air, struggling so savagely in that invisible and incomprehensible grip that the three-thousand-ton mass of the Skylark tossed and pitched like a child's plaything. Those inside her heard the sharp, spiteful crack of the machine-gun, and an instant later they heard a report that paralyzed their senses, even inside the

vessel and in the thin air of their enormous elevation, as the largest X-plosive bullet prepared by the inventors struck full upon the side of the hideous body. There was no smoke, no gas or vapor of any kind—only a huge volume of intolerable flame as the energy stored within the atoms of copper, instantaneously liberated, heated to incandescence and beyond all the atmosphere within a radius of hundreds of feet. The monster disappeared utterly, and Seaton, with unerring hand, reversed the bar and darted back down toward the fleet of airships. He reached them in time to focus the attractor upon the wrecked and helpless plane in the middle of its five-thousand-foot fall and lowered it gently to the ground, surrounded by the fleet.

The Skylark landed easily beside the wrecked machine, and the wanderers saw that their vessel was completely surrounded by a crowd of people—men and women identical in form and feature with themselves. They were a superbly molded race, the men fully as large as Seaton and DuQuesne; the women, while smaller than the men, were noticeably taller than the two women in the car. The men wore broad collars of metal, numerous metallic ornaments, and heavily-jeweled leather belts and shoulder-straps which were hung with weapons of peculiar patterns. The women carried no weapons, but were even more highly decorated than were the men—each slender, perfectly-formed body scintillated with the brilliance of hundreds of strange gems, flashing points of fire. Jeweled bands of metal and leather restrained their carefully-groomed hair; jeweled collars encircled their throats; jeweled belts, jeweled bracelets, jeweled anklets, each added its quota of brilliance to the glittering whole. The strangers wore no clothing, and their smooth skins shone a dark, livid, utterly indescribable color in the peculiar, unearthly, yellowish-bluish-green glare of the light. Green their skins undoubtedly were, but not any shade of green visible in the Earthly spectrum. The "whites" of their eyes were a light yellowish-green. The heavy hair of the women and the close-cropped locks of the men were green as well—a green so dark as to be almost black, as were also their eyes.

"Well, what d'you know about that?" pondered Seaton, dazedly. "They're human, right enough, but ye gods, what a color!"

"It is hard to tell how much of that color is real, and how much of it is due to this light," answered Crane. "Wait until you get outside, away from our daylight lamps, and you will probably look like a Chinese puzzle. As to the form, it is logical to suppose that wherever conditions are similar to those upon the Earth, and the age is anywhere nearly the same, development would be along the same lines as with us."

"That's right, too. Dottie, your hair will sure look gorgeous in this light. Let's go out and give the natives a treat!"

"I wouldn't look like that for a million dollars!" retorted Dorothy, "and if I'm going to look like that I won't get out of the ship, so there!"

"Cheer up, Dottie, you won't look like that. Your hair will be black in this light."

"Then what color will mine be?" asked Margaret.

Seaton glanced at her black hair.

"Probably a very dark and beautiful green," he grinned, his gray eyes sparkling, "but we'll have to wait and see. Friends and fellow-countrymen, I've got a hunch that this is going to be SOME visit. How about it, shall we go ahead with it?"

Dorothy went up to him, her face bright with eagerness.

"Oh, what a lark! Let's go!"

Even in DuQuesne's cold presence, Margaret's eyes sought those of her lover, and his sleeve, barely touching her arm, was enough to send a dancing thrill along it.

"Onward, men of Earth!" she cried, and Seaton, stepping up to the window, rapped sharply upon the glass with the butt of his pistol

and raised both hands high above his head in the universal sign of peace. In response, a man of Herculean mold, so splendidly decorated that his harness was one blazing mass of jewels, waved his arm and shouted a command. The crowd promptly fell back, leaving a clear space of several hundred yards. The man, evidently one in high command, unbuckled his harness, dropping every weapon, and advanced toward the Skylark, both arms upraised in Seaton's gesture.

Seaton went to the door and started to open it.

"Better talk to him from inside," cautioned Crane.

"I don't think so, Mart. He's peaceable, and I've got my gun in my pocket. Since he doesn't know what clothes are he'll think I'm unarmed, which is as it should be; and if he shows fight, it won't take more than a week for me to get into action."

"All right, go on. DuQuesne and I will come along."

"Absolutely not. He's alone, so I've got to be. I notice that some of his men are covering us, though. You might do the same for them, with a couple of the machine guns."

Seaton stepped out of the car and went to meet the stranger. When they had approached to within a few feet of each other the stranger stopped. He flexed his left arm smartly, so that the finger-tips touched his left ear, and smiled broadly, exposing a row of splendid, shining, green teeth. Then he spoke, a meaningless jumble of sounds. His voice, though light and thin, nevertheless seemed to be of powerful timbre.

Seaton smiled in return and saluted.

"Hello, Chief. I get your idea all right, and we're glad you're peaceable, but your language doesn't mean a thing in my young life."

The Chief tapped himself upon the chest, saying distinctly and impressively:

"Nalboon."

"Nalboon," repeated Seaton, and added, pointing to himself:

"Seaton."

"See Tin," answered the stranger, and again indicating himself, "Domak gok Mardonale."

"That must be his title," thought Seaton rapidly. "Have to give myself one, I guess."

"Boss of the Road," he replied, drawing himself up with pride.

The introduction made, Nalboon pointed to the wrecked plane, inclined his head in thanks, and turned to his people with one arm upraised, shouting an order in which Seaton could distinguish something that sounded like "See Tin, Bass uvvy Rood." Instantly every right arm in the assemblage was aloft, that of each man bearing a weapon, while the left arms snapped into the peculiar salute and a mighty cry arose as all repeated the name and title of the distinguished visitor.

Seaton turned to the Skylark, motioning to Crane to open the door.

"Bring out one of those big four-color signal rockets, Mart!" he called. "They're giving us a royal reception—let's acknowledge it right."

The party appeared, Crane carrying the huge rocket with an air of deference. As they approached, Seaton shrugged one shoulder and his cigarette-case appeared in his hand. Nalboon started, and in spite of his utmost efforts at self-control, he glanced at it in surprise. The case flew open and Seaton, taking a cigarette, extended the case.

"Smoke?" he asked affably. The other took one, but showed plainly that he had no idea of the use to which it was to be put. This astonishment of the stranger at a simple sleight-of-hand feat and his apparent ignorance of tobacco emboldened Seaton. Reaching into his mouth, he pulled out a flaming match, at which Nalboon started

violently. While all the natives watched in amazement, Seaton lighted the cigarette, and after half consuming it in two long inhalations, he apparently swallowed the remainder, only to bring it to light again. Having smoked it, he apparently swallowed the butt, with evident relish.

"They don't know anything about matches or smoking," he said, turning to Crane. "This rocket will tie them up in a knot. Step back, everybody."

He bowed deeply to Nalboon, pulling a lighted match from his ear as he did so, and lighted the fuse. There was a roar, a shower of sparks, a blaze of colored fire as the great rocket flew upward; but to Seaton's surprise, Nalboon took it quite as a matter of course, saluting as an acknowledgment of the courtesy.

Seaton motioned to his party to approach, and turned to Crane.

"Better not, Dick. Let him think that you are the king of everything in sight."

"Not on your life. If he is one king, we are two," and he introduced Crane, with great ceremony, to the Domak as the "Boss of the Skylark," at which the salute by his people was repeated.

Nalboon then shouted an order and a company of soldiers led by an officer came toward them, surrounding a small group of people, apparently prisoners. These captives, seven men and seven women, were much lighter in color than the rest of the gathering, having skins of a ghastly, pale shade, practically the same color as the whites of their eyes. In other bodily aspects they were the same as their captors in appearance, save that they were entirely naked except for the jeweled metal collars worn by all and a massive metal belt worn by one man. They walked with a proud and lofty carriage, scorn for their captors in every step.

Nalboon barked an order to the prisoners. They stared in defiance, motionless, until the man wearing the belt who had studied Seaton closely, spoke a few words in a low tone, when they all prostrated themselves. Nalboon then waved his hand, giving the whole group

to Seaton as slaves. Seaton, with no sign of his surprise, thanked the giver and motioned his slaves to rise. They obeyed and placed themselves behind the party—two men and two women behind Seaton and the same number behind Crane; one man and one woman behind each of the others.

Seaton then tried to make Nalboon understand that they wanted copper, pointing to his anklet, the only copper in sight. The chief instantly removed the trinket and handed it to Seaton; who, knowing by the gasp of surprise of the guard that it was some powerful symbol, returned it with profuse apologies. After trying in vain to make the other understand what he wanted, he led him into the Skylark and showed him the remnant of the power-bar. He showed him its original size and indicated the desired number by counting to sixteen upon his fingers. Nalboon nodded his comprehension and going outside, pointed upward toward the largest of the eleven suns visible, motioning its rising and setting, four times.

He then invited the visitors, in unmistakable sign language, to accompany him as guests of honor, but Seaton refused.

"Lead on, MacDuff, we follow," he replied, explaining his meaning by signs as they turned to enter the vessel. The slaves followed closely until Crane remonstrated.

"We don't want them aboard, do we, Dick? There are too many of them."

"All right," Seaton replied, and waved them away. As they stepped back the guard seized the nearest, a woman, and forced her to her knees; while a man, adorned with a necklace of green human teeth and carrying a shining broadsword, prepared to decapitate her.

"We must take them with us, I see," said Crane, as he brushed the guards aside. Followed by the slaves, the party entered the Skylark, and the dark green people embarked in their airplanes and helicopters.

Nalboon rode in a large and gaily-decorated plane, which led the fleet at its full speed of six hundred miles an hour, the Skylark taking a placing a few hundred yards above the flagship.

"I don't get these folks at all, Mart," said Seaton, after a moment's silence. "They have machines far ahead of anything we have on Earth and big guns that shoot as fast as machine-guns, and yet are scared to death at a little simple sleight-of-hand. They don't seem to understand matches at all, and yet treat fire-works as an every-day occurrence."

"We will have to wait until we know them better," replied Crane, and DuQuesne added:

"From what I have seen, their power seems to be all electrical. Perhaps they aren't up with us in chemistry, even though they are ahead of us in mechanics?"

Flying above a broad, but rapid and turbulent stream, the fleet soon neared a large city, and the visitors from Earth gazed with interest at this metropolis of the unknown world. The buildings were all the same height, flat-roofed, and arranged in squares very much as our cities are arranged. There were no streets, the spaces between the buildings being park-like areas, evidently laid out for recreation, amusement, and sport. There was no need for streets; all traffic was in the air. The air seemed full of flying vehicles, darting in all directions, but it was soon evident that there was exact order in the apparent confusion, each class of vessel and each direction of traffic having its own level. Eagerly the three men studied the craft, which ranged in size from one-man helicopters, little more than single chairs flying about in the air, up to tremendous multiplane freighters, capable of carrying thousands of tons.

Flying high over the city to avoid its congested air-lanes, the fleet descended toward an immense building just outside the city proper, and all landed upon its roof save the flagship, which led the Skylark to a landing-dock nearby—a massive pile of metal and stone, upon

which Nalboon and his retinue stood to welcome the guests. After Seaton had anchored the vessel immovably by means of the attractor, the party disembarked, Seaton remarking with a grin:

"Don't be surprised at anything I do, folks. I'm a walking storehouse of junk of all kinds, so that if occasion arises I can put on a real exhibition."

As they turned toward their host, a soldier, in his eagerness to see the strangers, jostled another. Without a word two keen swords flew from their scabbards and a duel to the death ensued. The visitors stared in amazement, but no one else paid any attention to the combat, which was soon over; the victor turning away from the body of his opponent and resuming his place without creating a ripple of interest.

Nalboon led the way into an elevator, which dropped rapidly to the ground-floor level. Massive gates were thrown open, and through ranks of people prostrate upon their faces the party went out into the palace grounds of the Domak, or Emperor, of the great nation of Mardonale.

Never before had Earthly eyes rested upon such scenes of splendor. Every color and gradation of their peculiar spectrum was present, in solid, liquid, and gas. The carefully-tended trees were all colors of the rainbow, as were the grasses and flowers along the walks. The fountains played streams of many and constantly-changing hues, and even the air was tinted and perfumed, swirling through metal arches in billows of ever-varying colors and scents. Colors and combinations of colors impossible to describe were upon every hand, fantastically beautiful in that peculiar, livid light. Diamonds and rubies, their colors so distorted by the green radiance as to be almost unrecognizable; emeralds glowing with an intense green impossible in earthly light, together with strange gems peculiar to this strange world, sparkled and flashed from railings, statues, and pedestals throughout the ground.

"Isn't this gorgeous, Dick?" whispered Dorothy. "But what do I look like? I wish I had a mirror—you look simply awful. Do I look like you do?"

"Not being able to see myself, I can't say, but I imagine you do. You look as you would under a county-fair photographer's mercury-vapor arc lamps, only worse. The colors can't be described. You might as well try to describe cerise to a man born blind as to try to express these colors in English, but as near as I can come to it, your eyes are a dark sort of purplish green, with the whites of your eyes and your teeth a kind of plush green. Your skin is a pale yellowish green, except for the pink of your cheeks, which is a kind of black, with orange and green mixed up in it. Your lips are black, and your hair is a funny kind of color, halfway between black and old rose, with a little green and...."

"Heavens, Dick, stop! That's enough!" choked Dorothy. "We all look like hobgoblins. We're even worse than the natives."

"Sure we are. They were born here and are acclimated to it—we are strangers and aren't. I would like to see what one of these people would look like in Washington."

Nalboon led them into the palace proper and into a great dining hall, where a table was already prepared for the entire party. This room was splendidly decorated with jewels, its many windows being simply masses of gems. The walls were hung with a cloth resembling silk, which fell to the floor in shimmering waves of color.

Woodwork there was none. Doors, panels, tables, and chairs were cunningly wrought of various metals. Seaton and DuQuesne could recognize a few of them, but for the most part they were unknown upon the Earth; and were, like the jewels and vegetation of this strange world, of many and various peculiar colors. A closer inspection of one of the marvelous tapestries showed that it also was of metal, its threads numbering thousands to the inch. Woven of many different metals, of vivid but harmonious colors in a strange and intricate design, it seemed to writhe as its colors changed with every variation in the color of the light; which, pouring from concealed sources, was reflected by the highly-polished metal and innumerable jewels of the lofty, domed ceiling.

"Oh ... isn't this too perfectly gorgeous?" breathed Dorothy. "I'd give anything for a dress made out of that stuff, Dick. Cloth-of-gold is common by comparison!"

"Would you dare wear it, Dottie?" asked Margaret.

"*Would* I? I'd wear it in a minute if I could only get it. It would take Washington by storm!"

"I'll try to get a piece of it, then," smiled Seaton. "I'll see about it while we are getting the copper."

"We'd better be careful in choosing what we eat here, Seaton," suggested DuQuesne, as the Domak himself led them to the table.

"We sure had. With a copper ocean and green teeth, I shouldn't be surprised if copper, arsenic, and other such trifles formed a regular part of their diet."

"The girls and I will wait for you two chemists to approve every dish before we try it, then," said Crane.

Nalboon placed his guests, the light-skinned slaves standing at attention behind them, and numerous servants, carrying great trays, appeared. The servants were intermediate in color between the light and the dark races, with dull, unintelligent faces, but quick and deft in their movements.

The first course—a thin, light wine, served in metal goblets—was approved by the chemists, and the dinner was brought on. There were mighty joints of various kinds of meat; birds and fish, both raw and cooked in many ways; green, pink, purple, and white vegetables and fruits. The majordomo held each dish up to Seaton for inspection, the latter waving away the fish and the darkest green foods, but approving the others. Heaping plates, or rather metal trays, of food were placed before the diners, and the attendants behind their chairs handed them peculiar implements—knives with razor edges, needle-pointed stilettoes instead of forks, and wide, flexible spatulas, which evidently were to serve the purposes of both forks and spoons.

"I simply can't eat with these things!" exclaimed Dorothy in dismay, "and I don't like to drink soup out of a can, so there!"

"That's where my lumberjack training comes in handy," grinned Seaton. "With this spatula I can eat faster than I could with two forks. What do you want, girls, forks or spoons, or both?"

"Both, please."

Seaton reached out over the table, seizing forks and spoons from the air and passing them to the others, while the natives stared in surprise. The Domak took a bowl filled with brilliant blue crystals from the major-domo, sprinkled his food liberally with the substance, and passed it to Seaton, who looked at the crystals attentively.

"Copper sulphate," he said to Crane. "It's a good thing they add it at the table instead of cooking with it, or we'd be out of luck."

Waving the copper sulphate away, he again reached out, this time producing a pair of small salt-and pepper-shakers, which he passed to the Domak after he had seasoned the dishes before him. Nalboon tasted the pepper cautiously and smiled in delight, half-emptying the shaker upon his plate. He then sprinkled a few grains of salt into his palm, stared at them with an expression of doubting amazement, and after a few rapid sentences poured them into a dish held by an officer who had sprung to his side. The officer studied them closely, then carefully washed his chief's hand. Nalboon turned to Seaton, plainly asking for the salt-cellar.

"Sure, old top. Keep 'em both, there's lots more where those came from," as he produced several more sets in the same mysterious way and handed them to Crane, who in turn passed them to the others.

The meal progressed merrily, with much conversation in the sign-language between the two parties. It was evident that Nalboon, usually stern and reticent, was in an unusually pleasant mood. The

viands, though of peculiar flavor, were in the main pleasing to the palates of the Earthly visitors.

"This fruit salad, or whatever it is, is divine," remarked Dorothy, after an experimental bite. "May we eat as much as we like, or had we better just eat a little?"

"Go as far as you like," returned her lover. "I wouldn't recommend it, as a steady diet, as I imagine everything contains copper and other heavy metals in noticeable amounts, and probably considerable arsenic, but for a few days it can't very well hurt us much."

After the meal, Nalboon bade them a ceremonious farewell, and they were escorted to a series of five connecting rooms by the royal usher, escorted by an entire company of soldiers, who mounted guard outside the doors. Gathered in one room, they discussed sleeping arrangements. The girls insisted that they would sleep together, and that the men should occupy the rooms at either side. As the girls turned away, the four slaves followed.

"We don't want these people, and I can't make them go away!" cried Dorothy.

"I don't want them, either," replied Seaton, "but if we chase them out they'll get their heads chopped off. You girls take the women and we'll take the men."

Seaton waved all the women into the girls' room, but they paused irresolutely. One of them went up to the man wearing the metal belt, evidently their leader, and spoke to him rapidly as she threw her arms around his neck. He shook his head, motioning toward Seaton several times as he spoke to her reassuringly. With his arm about her tenderly, he led her to the door, the other women following. Crane and DuQuesne having gone to their rooms with their attendants, the man wearing the belt drew the blinds and turned to assist Seaton in taking off his clothes.

"I never had a valet before, but go as far as you like if it pleases you," remarked Seaton, as he began to throw off his clothes. A multitude

of small articles fell from their hiding-places in his garments as he removed them. Almost stripped, Seaton stretched vigorously, the muscles writhing and rippling in great ridges under the satin skin of his broad back and mighty arms and shoulders as he filled his capacious lungs and twisted about, working off the stiffness caused by the days of comparative confinement.

The four slaves stared in open-mouthed astonishment at this display of muscular development and conversed among themselves as they gathered up Seaton's discarded clothing. Their leader picked up a salt-shaker, a couple of silver knives and forks, and some other articles, and turned to Seaton, apparently asking permission to do something with them. Seaton nodded assent carelessly and turned to his bed. As he did so, he heard a slight clank of arms in the hall as the guard was changed, and lifting the blind a trifle he saw that guards were stationed outside as well. As he went to bed, he wondered whether the guards were guards of honor or jailers; whether he and his party were honored guests or prisoners.

Three of the slaves, at a word from their chief, threw themselves upon the floor and slept, but he himself did not rest. Opening the apparently solid metal belt, he took out a great number of small tools, many tiny instruments, and several spools of insulated wire. He then took the articles Seaton had given him, taking great pains not to spill a single grain of salt, and set to work. Hour after hour he labored, a strange, exceedingly complex instrument taking form under his clever fingers.

CHAPTER XIV.

Nalboon Unmasked

By the time you finish reading the

After a long, sound sleep, Seaton awoke and sprang out of bed. No sooner had he started to shave, however, than one of the slaves touched his arm, motioning

final instalment of "The Skylark of Space," we are certain that you will agree with us that it is one of the outstanding scienti-fiction stories of the decade; an interplanetarian story that will not be eclipsed soon. It will be referred to by all scienti-fiction fans for years to come. It will be read and reread. This is not a mere prophecy of ours, because we have been deluged with letters since we began publishing this story. In the closing chapters, you will follow the adventures with bated breath, and you will find that though the two preceding instalments were hair-raising and thought absorbing, the final instalment eclipses the others a good deal. Plots,

him into a reclining chair and showing him a keen blade, long and slightly curved. Seaton lay down and the slave shaved him with a rapidity and smoothness he had never before experienced, so wonderfully sharp was the peculiar razor. After Seaton had dressed, the barber started to shave the chief slave, without any preliminary treatment save rubbing his face with a perfumed oil.

"Hold on a minute," interjected Seaton, who was watching the process with interest, "here's something that helps a lot." He lathered the face with his brush and the man looked up in surprised pleasure as his stiff beard was swept away without a sound.

Seaton called to the others and soon the party was assembled in his room, all dressed very lightly, because of the unrelieved and unvarying heat, which was constant at one hundred degrees. A gong sounded, and one of the slaves opened the door, ushering in a party of servants bearing a table, ready set. During the meal, Seaton was greatly surprised at hearing Dorothy carrying on a halting conversation, with one of the women standing behind her.

"I knew that you were a language shark, Dottie, with five or six different ones to your credit, but I didn't suppose you could learn to talk this stuff in one day."

counterplots, hair-raising and hair-breadth escapes, mixed with love, adventure and good science seem to fairly tumble all over the pages. By the time you finish this instalment, you will wish to go back to the beginning of the story and read it more carefully and thrill all over again.

"I can't," she replied, "but I've picked up a few words of it. I can understand very little of what they are trying to tell me."

The woman spoke rapidly to the man standing behind Seaton, and as soon as the table had been carried away, he asked permission to speak to Dorothy. Fairly running across to her, he made a slight obeisance and in eager tones poured forth such a stream of language that she held up her hand to silence him.

"Go slower, please," she said, and added a couple of words in his own tongue.

There ensued a strange dialogue, with many repetitions and much use of signs. She turned to Seaton, with a puzzled look.

"I can't make out all he says, Dick, but he wants you to take him into another room of the palace here, to get back something or other that they took from him when they captured him. He can't go alone—I think he says he will be killed if he goes anywhere without you. And he says that when you get there, you must be sure not to let the guards come inside."

"All right, let's go!" and Seaton motioned the man to precede him. As Seaton started for the door, Dorothy fell into step beside him.

"Better stay back, Dottie, I'll be back in a minute," he said at the door.

"I will not stay back. Wherever you go, I go," she replied in a voice inaudible to the others. "I simply will not stay away from you a single minute that I don't have to."

"All right, little girl," he replied in the same tone. "I don't want to be away from you, either, and I don't think that we're in any danger here."

Preceded by the chief slave and followed by half a dozen others, they went out into the hall. No opposition was made to their progress, but a full half-company of armed guards fell in around them as an escort, regarding Seaton with looks composed of equal parts of reverence and fear. The slave led the way rapidly to a room in a distant wing of the palace and opened the door. As Seaton stepped in, he saw that it was evidently an audience-chamber or court-room, and that it was now entirely empty. As the guard approached the door, Seaton waved them back. All retreated across the hall except the officer in charge, who refused to move. Seaton, the personification of offended dignity, first stared at the offender, who returned the stare, and stepped up to him insolently, then pushed him back roughly, forgetting that his strength, great upon Earth, would be gigantic upon this smaller world. The officer spun across the corridor, knocking down three of his men in his flight. Picking himself up, he drew his sword and rushed, while his men fled in panic to the extreme end of the corridor. Seaton did not wait for him, but in one bound leaped half-way across the intervening space to meet him. With the vastly superior agility of his earthly muscles he dodged the falling broadsword and drove his left fist full against the fellow's chin, with all the force of his mighty arm and all the momentum of his rapidly moving body behind the blow. The crack of breaking bones was distinctly audible as the officer's head snapped back. The force of the blow lifted him high into the air, and after turning a complete somersault, he brought up with a crash against the opposite wall, dropping to the floor stone dead. As several of his men, braver than the others, lifted their peculiar rifles, Seaton drew and fired in one incredibly swift motion, the X-plosive bullet obliterating the entire group of men and demolishing that end of the palace.

In the meantime the slave had taken several pieces of apparatus from a cabinet in the room and had placed them in his belt. Stopping only to observe for a few moments a small instrument which he clamped upon the head of the dead man, he rapidly led the

way back to the room they had left and set to work upon the instrument he had constructed while the others had been asleep. He connected it, in an intricate system of wiring, with the pieces of apparatus he had just recovered.

"That's a complex job of wiring," said DuQuesne admiringly. "I've seen several intricate pieces of apparatus myself, but he has so many circuits there that I'm lost. It would take an hour to figure out the lines and connections alone."

Straightening abruptly, the slave clamped several electrodes upon his temples and motioned to Seaton and the others, speaking to Dorothy as he did so.

"He wants us to let him put those things on our heads," she translated. "Shall we let him, Dick?"

"Yes," he replied without hesitation. "I've got a real hunch that he's our friend, and I'm not sure of Nalboon. He doesn't act right."

"I think so, too," agreed the girl, and Crane added:

"I can't say that I relish the idea, but since I know that you are a good poker player, Dick, I am willing to follow your hunch. How about you, DuQuesne?"

"Not I," declared that worthy, emphatically. "Nobody wires me up to anything I can't understand, and that machine is too deep for me."

Margaret elected to follow Crane's example, and, impressed by the need for haste evident in the slave's bearing, the four walked up to the machine without further talk. The electrodes were clamped into place quickly and the slave pressed a lever. Instantly the four visitors felt that they had a complete understanding of the languages and customs of both Mardonale, the nation in which they now were, and of Kondal, to which nation the slaves belonged, the only two civilized nations upon Osnome. While the look of amazement at this method of receiving instruction was still upon their faces, the slave —or rather, as they now knew him, Dunark, the Kofedix or Crown Prince of the great nation of Kondal—began to disconnect the wires. He cut out the wires leading to the two girls and to Crane, and was

reaching for Seaton's, when there was a blinding flash, a crackling sound, the heavy smoke of burning metal and insulation, and both Dunark and Seaton fell to the floor.

Before Crane could reach them, however, they were upon their feet and the stranger said in his own tongue, now understood by every one but DuQuesne:

"This machine is a mechanical educator, a thing entirely new, in our world at least. Although I have been working on it for a long time, it is still in a very crude form. I did not like to use it in its present state of development, but it was necessary in order to warn you of what Nalboon is going to do to you, and to convince you that the best way of saving your lives would save our lives as well. The machine worked perfectly until something, I don't know what, went wrong. Instead of stopping, as it should have done, at teaching your party to speak our languages, it short-circuited us two completely, so that every convolution in each of our brains has been imprinted upon the brain of the other. It was the sudden formation of all the new convolutions that rendered us unconscious. I can only apologize for the break-down, and assure you that my intentions were of the best."

"You needn't apologize," returned Seaton. "That was a wonderful performance, and we're both gainers, anyway, aren't we? It has taken us all our lives to learn what little we know, and now we each have the benefit of two lifetimes, spent upon different worlds! I must admit, though, that I have a whole lot of knowledge that I don't know how to use."

"I am glad you take it that way," returned the other warmly, "for I am infinitely the better off for the exchange. The knowledge I imparted was nothing, compared to that which I received. But time presses—I must tell you our situation. I am, as you now know, the Kofedix of Kondal. The other thirteen are fedo and fediro, or, as you would say, princes and princesses of the same nation. We were captured by one of Nalboon's raiding parties while upon a hunting trip, being overcome by some new, stupefying gas, so that we could not kill ourselves. As you know, Kondal and Mardonale have been at

war for over ten thousand karkamo—something more than six thousand years of your time. The war between us is one of utter extermination. Captives are never exchanged and only once during an ordinary lifetime does one ever escape. Our attendants were killed immediately. We were being taken to furnish sport for Nalboon's party by being fed to one of his captive kolono—animals something like your earthly devilfish—when the escort of battleships was overcome by those four karlono, the animals you saw, and one of them seized Nalboon's plane, in which we were prisoners. You killed the karlon, saving our lives as well as those of Nalboon and his party.

"Having saved his life, you and your party should be honored guests of the most honored kind, and I venture to say that you would be so regarded in any other nation of the universe. But Nalboon, the Domak—a title equivalent to your word 'Emperor' and our word 'Karfedix'—of Mardonale, is utterly without either honor or conscience, as are all Mardonalians. At first he was afraid of you, as were we all. We thought you visitors from a planet of our fifteenth sun, which is now at its nearest possible approach to us. After your display of superhuman power and ability, we expected instant annihilation. However, after seeing the Skylark as a machine, discovering that you are short of power, and finding that you are gentle instead of bloodthirsty by nature, Nalboon lost his fear of you and resolved to rob you of your vessel, with its wonderful secrets of power. Though we are so ignorant of chemistry that I cannot understand the thousandth part of what I just learned from you, we are a race of mechanics and have developed machines of many kinds to a high state of efficiency, including electrical machines of all kinds. In fact, electricity, generated by our great waterfalls, is our only power. No scientist upon Osnome has ever had an inkling that intra-atomic energy exists. Nalboon cannot understand the power, but he solved the means of liberating it at a glance—and that glance sealed your death-warrants. With the Skylark, he could conquer

Kondal, and to assure the downfall of my nation he would do anything.

"Also, he or any other Osnomian scientist would go to any lengths whatever—would challenge the great First Cause itself—to secure even one of those little bottles of the chemical you call 'salt.' It is far and away the scarcest and most precious substance in the world. It is so rare that those bottles you produced at the table held more than the total amount previously known to exist upon Osnome. We have great abundance of all the heavy metals, but the lighter metals are rare. Sodium and chlorin are the rarest of all known elements. Its immense value is due, not to its rarity, but to the fact that it is an indispensable component of the controlling instruments of our wireless power stations and that it is used as a catalyst in the manufacture of our hardest metals.

"For these reasons, you understand why Nalboon does not intend to let you escape and why he intends that this kokam (our equivalent of a day) shall be your last. About the second or third kam (hour) of the sleeping period he intends to break into the Skylark, learn its control, and secure the salt you undoubtedly have in the vessel. Then my party and myself will be thrown to the kolon. You and your party will be killed and your bodies smelted to recover the salt that is in them. This is the warning I had to give you. Its urgency explains the use of my untried mechanical educator; the hope that my party could escape with yours, in your vessel, explains why you saw me, the Kofedix of Kondal, prostrate myself before that arch-fiend Nalboon."

"How do you, a captive prince of another nation, know these things?" asked Crane, doubtfully.

"I read Nalboon's ideas from the brain of that officer whom the Karfedix Seaton killed. He was a ladex of the guards—an officer of about the same rank as one of your colonels. He was high in Nalboon's favor, and he was to have been in charge of the work of breaking into the Skylark and killing us all. Let me caution you now; do not let any Mardonalian touch our hands with a wire, for if you do, your thoughts will be recorded and the secrets of the Skylark

and your many other mysterious things, such as smoking, matches, and magic feats, will be secrets no longer."

"Thanks for the information," responded Seaton, "but I want to correct your title for me. I'm no Karfedix—merely a plain citizen."

"In one way I see that that is true," replied the Kofedix with a puzzled look. "I cannot understand your government at all—but the inventor of the Skylark must certainly rank as a Karfedix."

As he spoke, a smile of understanding passed over his face and he continued:

"I see. Your title is Doctor of Philosophy, which must mean that you are the Karfedix of Knowledge of the Earth."

"No, no. You're way off. I'm...."

"Certainly Seaton is the Karfedix of Knowledge," broke in DuQuesne. "Let it go at that, anyway, whatever it means. The thing to do now is to figure a way out of this."

"You chirped it then, Blackie. Dunark, you know this country better than we do; what do you suggest?"

"I suggest that you take my party into the Skylark and escape from Mardonale as soon as possible. I can pilot you to Kondalek, the capital city of our nation. There, I can assure you, you will be welcomed as you deserve. My father, the Karfedix, will treat you as a Karfedix should be treated. As far as I am concerned, nothing I can ever do will lighten the burden of my indebtedness to you, but I promise you all the copper you want, and anything else you may desire that is within the power of man to give you."

Seaton thought deeply a moment, then shook Dunark's hand vigorously.

"That suits me, Kofedix," he said warmly. "I thought from the first that you were our friend. Shall we make for the Skylark right now,

or wait a while?"

"We had better wait until after the second meal," the prince replied. "We have no armor, and no way of making any. We would be helpless against the bullets of any except a group small enough so that you could kill them all before they could fire. The kam after the second meal is devoted to strolling about the grounds, so that our visiting the Skylark would look perfectly natural. As the guard is very lax at that time, it is the best time for the attempt."

"But how about my killing his company of guards and blowing up one wing of his palace? Won't he have something to say about that?"

"I don't know," replied the Kofedix doubtfully. "It depends upon whether his fear of you or his anger is the greater. He should pay his call of state here in your apartment in a short time, as it is the inviolable rule of Osnome, that any visitor shall receive a call of state from one of his own rank before leaving his apartment for the first time. His actions may give you some idea as to his feelings, though he is an accomplished diplomat and may conceal his real feelings entirely. But let me caution you not to be modest or soft-spoken. He will mistake softness for fear."

"All right," grinned Seaton. "In that case I won't wait to try to find out what he thinks. If he shows any signs of hostility at all, I'll open up on him."

"Well," remarked Crane, calmly, "if we have some time to spare, we may as well wait comfortably instead of standing in the middle of the room. I, for one, have a lot of questions to ask about this new world."

Acting upon this suggestion, the party seated themselves upon comfortable divans, and Dunark rapidly dismantled the machine he had constructed. The captives remained standing, always behind the visitors until Seaton remonstrated.

"Please sit down, everybody. There's no need of keeping up this farce of your being slaves as long as we're alone, is there, Dunark?"

"No, but at the first sound of the gong announcing a visitor we must be in our places. Now that we are all comfortable and waiting, I will introduce my party to yours.

"Fellow Kondalians, greet the Karfedo Seaton and Crane," he began, his tongue fumbling over the strange names, "of a distant world, the Earth, and the two noble ladies, Miss Vaneman and Miss Spencer, soon to be their Karfediro.

"Guests from Earth, allow me to present to you the Kofedir Sitar, the only one of my wives who accompanied me upon our ill-fated hunting expedition."

Then, still ignoring DuQuesne as a captive, he introduced the other Kondolians in turn as his brothers, sisters, cousins, nieces, and nephews—all members of the great ruling house of Kondal.

"Now," he concluded, "after I have a word with you in private, Doctor Seaton, I will be glad to give the others all the information in my power."

He led Seaton out of earshot of the others and said in a low voice:

"It is no part of Nalboon's plan to kill the two women. They are so beautiful, so different from our Osnomian women, that he intends to keep them—alive. Understand?"

"Yes," returned Seaton grimly, his eyes turning hard, "I get you all right—but what he'll do and what he thinks he'll do are two entirely different breeds of cats."

Returning to the others, they found Dorothy and Sitar deep in conversation.

"So a man has half a dozen or so wives?" Dorothy was asking in surprise. "How do you get along together? I'd fight like a wildcat if my husband tried to have other wives!"

"We get along splendidly, of course," returned the Osnomian princess in equal surprise. "I would not think of being a man's only wife. I wouldn't consider marrying a man who could win only one wife—think what a disgrace it would be! And think how lonely one

would be while her husband is away at war—we would go insane if we did not have the company of the other wives. There are six of us, and we could not get along at all without each other."

"I've got a compliment for you and Peggy, Dottie," said Seaton. "Dunark here thinks that you two girls look good enough to eat—or words to that effect." Both girls flushed slightly, the purplish-black color suffusing their faces. They glanced at each other and Dorothy voiced the thought of both as she said:

"How can you, Kofedix Dunark? In this horrible light we both look perfectly dreadful. These other girls would be beautiful, if we were used to the colors, but we two look simply hideous."

"Oh, no," interrupted Sitar. "You have a wonderfully rich coloring. It is a shame to hide so much of yourselves with robes."

"Their eyes interpret colors differently than ours do," explained Seaton. "What to us are harsh and discordant colors are light and pleasing to their eyes. What looks like a kind of sloppy greenish black to us may—in fact, does—look a pale pink to them."

"Are Kondal and Mardonale the only two nations upon Osnome?" asked Crane.

"The only civilized nations, yes. Osnome is divided into two great and almost equal continents, separated by a wide ocean which encircles the globe. One is Kondal, the other Mardonale. Each nation has several nations or tribes of savages, which inhabit various waste places."

"You are the light race, Mardonale the dark," continued Crane. "What are the servants, who seem half-way between?"

"They are slaves...."

"Captured savages?" interrupted Dorothy.

"No. They are a separate race. They are a race so low in intelligence that they cannot exist except as slaves, but they can be trained to understand language and to do certain kinds of work. They are harmless and mild, making excellent servants, otherwise they would have perished ages ago. All menial work and most of the manual labor is done by the slave race. Formerly criminals were sterilized and reduced to unwilling slavery, but there have been no unwilling slaves in Kondal for hundreds of karkamo."

"Why? Are there no criminals any more?"

"No. With the invention of the thought recorder an absolutely fair trial was assured and the guilty were all convicted. They could not reproduce themselves, and as a natural result crime died out."

"That is," he added hastily, "what we regard as crime. Duelling, for instance, is a crime upon Earth; here it is a regular custom. In Kondal duels are rather rare and are held only when honor is involved, but here in Mardonale they are an every-day affair, as you saw when you landed."

"What makes the difference?" asked Dorothy curiously.

"As you know, with us every man is a soldier. In Kondal we train our youth in courage, valor, and high honor—in Mardonale they train them in savage blood-thirstiness alone. Each nation fixed its policy in bygone ages to produce the type of soldier it thought most efficient."

"I notice that everyone here wears those heavy collars," said Margaret. "What are they for?"

"They are identification marks. When a child is nearly grown, a collar bearing his name and the device of his house is cast about his neck. This collar is made of 'arenak,' a synthetic metal which, once formed, cannot be altered by any usual means. It cannot be scratched, cut, bent, broken, or worked in any way except at such a high temperature that death would result, if such heat were applied to the collar. Once the arenak collar is cast about a person's neck he

is identified for life, and any adult Osnomian not wearing a collar is put to death."

"That must be an interesting metal," remarked Crane. "Is your belt a similar mark?"

"This belt is an idea of my own," and Dunark smiled broadly. "It looks like opaque arenak, but isn't. It is merely a pouch in which I carry anything I am particularly interested in. Even Nalboon thought it was arenak, so he didn't trouble to try to open it. If he had opened it and taken my tools and instruments, I couldn't have built the educator."

"Is that transparent armor arenak?"

"Yes, the only difference being that nothing is added to the matrix to color or make opaque the finished metal. It is in the preparation of this metal that salt is indispensable. It acts only as a catalyst, being recovered afterward, but neither nation has ever had enough salt to make all the armor they want."

"Aren't those monsters—karlono, I think you called them—covered by the same thing? And what are those animals, anyway?" Dorothy asked.

"Yes, they are armored with arenak, and it is thought that the beasts grow it, the same as fishes grow scales. The karlono are the most frightful scourge of Osnome. Very little is known of them, though every scientist has theorized upon them since time immemorial. It is very seldom that one is ever killed, as they easily outfly our swiftest battleships, and only fight when they can be victorious. To kill one requires a succession of the heaviest high-explosive shells in the same spot, a joint in the armor; and after the armor is once penetrated, the animal is blown into such small fragments that reconstruction is impossible. From such remains it has been variously described as a bird, a beast, a fish, and a vegetable; sexual, asexual, and hermaphroditic. Its habitat is unknown, it being variously supposed to live high in the air, deep in the ocean, and buried in the swamps. Another theory is that they live upon one of our satellites, which encounters our belt of atmosphere every

karkam. Nothing is certainly known about the monsters except their terrible destructiveness and their insatiable appetites. One of them will devour five or six airships at one time, absorbing the crews and devouring the cargo and all of the vessels except the very hardest of the metal parts."

"Do they usually go in groups?" asked Crane. "If they do, I should think that a fleet of warships would be necessary for every party."

"No, they are almost always found alone. Only very rarely are two found together. This is the first time in history that more than two have ever been seen together. Two battleships can always defeat one karlon, so they are never attacked. With four battleships Nalboon considered his expedition perfectly safe, especially as they are now rare. The navies hunted down and killed what was supposed to be the last one upon Osnome more than a karkam ago, and none have been seen since, until we were attacked...."

The gong over the door sounded and the Kondalians leaped to their positions back of the Earthly visitors. The Kofedix went to the door. Nalboon brushed him aside and entered, escorted by a full company of heavily-armed soldiery. A scowl of anger was upon his face and he was plainly in an ugly mood.

"Stop, Nalboon of Mardonale!" thundered Seaton in the Mardonalian tongue and with the full power of his mighty voice. "Dare you invade my privacy unannounced and without invitation?"

The escort shrank back, but the Domak stood his ground, although he was plainly taken aback. With an apparent effort he smoothed his face into lines of cordiality.

"I merely came to inquire why my guards are slain and my palace destroyed by my honored guest?"

"As for slaying your guards, they sought to invade my privacy. I warned them away, but one of them was foolish enough to try to kill me. Then the others attempted to raise their childish rifles against

me, and I was obliged to destroy them. As for the wall, it happened to be in the way of the thought-waves I hurled against your guards—consequently it was demolished. An honored guest! Bah! Are honored guests put to the indignity of being touched by the filthy hands of a mere ladex?"

"You do not object to the touch of slaves!" with a wave of his hand toward the Kondalians.

"That is what slaves are for," coldly. "Is a Domak to wait upon himself in the court of Mardonale? But to return to the issue. Were I an honored guest this would never have happened. Know, Nalboon, that when you attempt to treat a visiting Domak of MY race as a low-born captive, you must be prepared to suffer the consequences of your rashness!"

"May I ask how you, so recently ignorant, know our language?"

"You question me? That is bold! Know that I, the Boss of the Road, show ignorance or knowledge, when and where I please. You may go."

CHAPTER XV.

The Escape from Mardonale

"That was a wonderful bluff, Dick!" exclaimed the Kofedix in English as soon as Nalboon and his guards had disappeared. "That was exactly the tone to take with him, too—you've sure got him guessing!"

"It seemed to get him, all right, but I'm wondering how long it'll hold him. I think we'd better make a dash for the Skylark right now, before he has time to think it over, don't you?"

"That is undoubtedly the best way," Dunark replied, lapsing into his own tongue. "Nalboon is plainly in awe of you now, but if I

understand him at all, he is more than ever determined to seize your vessel, and every darkam's delay is dangerous."

The Earth-people quickly secured the few personal belongings they had brought with them. Stepping out into the hall and waving away the guards, Seaton motioned Dunark to lead the way. The other captives fell in behind, as they had done before, and the party walked boldly toward the door of the palace. The guards offered no opposition, but stood at attention and saluted as they passed. As they approached the entrance, however, Seaton saw the major-domo hurrying away and surmised that he was carrying the news to Nalboon. Outside the door, walking directly toward the landing dock, Dunark spoke in a low voice to Seaton, without turning.

"Nalboon knows by this time that we are making our escape, and it will be war to the death from here to the Skylark. I do not think there will be any pursuit from the palace, but he has warned the officers in charge of the dock and they will try to kill us as soon as we step out of the elevator, perhaps sooner. Nalboon intended to wait, but we have forced his hand and the dock is undoubtedly swarming with soldiers now. Shoot first and oftenest. Shoot first and think afterward. Show no mercy, as you will receive none—remember that the quality you call 'mercy' does not exist upon Osnome."

Rounding a great metal statue about fifty feet from the base of the towering dock, they saw that the door leading into one of the elevators was wide open and that two guards stood just inside it. As they caught sight of the approaching party, the guards raised their rifles; but, quick as they were, Seaton was quicker. At the first sight of the open door he had made two quick steps and had hurled himself across the intervening forty feet in a long football plunge. Before the two guards could straighten, he crashed into them, his great momentum hurling them across the elevator cage and crushing them into unconsciousness against its metal wall.

"Good work!" said Dunark, as he preceded the others into the elevator, and, after receiving Seaton's permission, distributed the

weapons of the two guards among the men of his party. "Now we can surprise those upon the roof. That was why you didn't shoot?"

"Yes, I was afraid to risk a shot—it would give the whole thing away," Seaton replied, as he threw the unconscious guards out into the grounds and closed the massive door.

"Aren't you going to kill them?" asked Sitar, amazement in every feature and a puzzled expression in her splendid eyes. A murmur arose from the other Kondalians, which was quickly silenced by the Kofedix.

"It is dishonorable for a soldier of Earth to kill a helpless prisoner," he said briefly. "We cannot understand it, but we must not attempt to sway him in any point of honor."

Dunark stepped to the controls and the elevator shot upward, stopping at a landing several stories below the top of the dock. He took a peculiar device from his belt and fitted it over the muzzle of his strange pistol.

"We will get out here," he instructed the others, "and go up the rest of the way by a little-used flight of stairs. We will probably encounter some few guards, but I can dispose of them without raising an alarm. You will all stay behind me, please."

Seaton remonstrated, and Dunark went on:

"No, Seaton, you have done your share, and more. I am upon familiar ground now, and can do the work alone better than if you were to help me. I will call upon you, however, before we reach the dock."

The Kofedix led the way, his pistol resting lightly against his hip, and at the first turn of the corridor they came full upon four guards. The pistol did not move from its place at the side of the leader, but there were four subdued clicks and the four guards dropped dead, with bullets through their brains.

"Seaton, that is *some* silencer," whispered DuQuesne. "I didn't suppose a silencer could work that fast."

"They don't use powder," Seaton replied absently, all his faculties directed toward the next corner. "The bullets are propelled by an electrical charge."

In the same manner Dunark disposed of several more guards before the last stairway was reached.

"Seaton," he whispered in English, "now is the time we need your rapid pistol-work and your high-explosive shells. There must be hundreds of soldiers on the other side of that door, armed with machine-cannon shooting high-explosive shells at the rate of a thousand per minute. Our chance is this—their guns are probably trained upon the elevators and main stairways, since this passage is unused and none of us would be expected to know of it. Most of them don't know of it themselves. It will take them a second or two to bring their guns to bear upon us. We must do all the damage we can—kill them all, if possible—in that second or two. If Crane will lend me a pistol, we'll make the rush together."

"I've a better scheme than that," interrupted DuQuesne. "Next to you, Seaton, I'm the fastest man with a gun here. Also, like you, I can use both hands at once. Give me a couple of clips of those special cartridges and you and I will blow that bunch into the air before they know we're here."

It was decided that the two pistol experts should take the lead, closely followed by Crane and Dunark. The weapons were loaded to capacity and put in readiness for instant use.

"Let's go, bunch!" said Seaton. "The quicker we start the quicker we'll get back. Get ready to run out there, all the rest of you, as soon as the battle's over. Ready? On your marks—get set—go!"

He kicked the door open and there was a stuttering crash as the four automatic pistols simultaneously burst into practically continuous flame—a crash obliterated by an overwhelming concussion of sound as the X-plosive shells, sweeping the entire roof with a rapidly-

opening fan of death, struck their marks and exploded. Well it was for the little group of wanderers that the two men in the door were past masters in the art of handling their weapons; well it was that they had in their tiny pistol-bullets the explosive force of hundreds of giant shells! For rank upon rank of soldiery were massed upon the roof; rapid-fire cannon, terrible engines of destruction, were pointing toward the elevators and toward the main stairways and approaches. But so rapid and fierce was the attack, that even those trained gunners had no time to point their guns. The battle lasted little more than a second, being over before either Crane or Dunark could fire a shot, and silence again reigned even while broken and shattered remnants of the guns and fragments of the metal and stone of the dock were still falling to the ground through a fine mist of what had once been men.

Assured by a rapid glance that not a single Mardonalian remained upon the dock, Seaton turned back to the others.

"Make it snappy, bunch! This is going to be a mighty unhealthy spot for us in a few minutes."

Dorothy threw her arms around his neck in relief. With one arm about her, he hastily led the way across the dock toward the Skylark, choosing the path with care because of the yawning holes blown into the structure by the terrific force of the explosions. The Skylark was still in place, held immovable by the attractor, but what a sight she was! Her crystal windows were shattered; her mighty plates of four-foot Norwegian armor were bent and cracked and twisted; two of her doors, warped and battered, hung awry from their broken hinges. Not a shell had struck her: all this damage had been done by flying fragments of the guns and of the dock itself; and Seaton and Crane, who had developed the new explosive, stood aghast at its awful power.

They hastily climbed into the vessel, and Seaton assured himself that the controls were uninjured.

"I hear battleships," Dunark said. "Is it permitted that I operate one of your machine guns?"

"Go as far as you like," responded Seaton, as he placed the women beneath the copper bar—the safest place in the vessel—and leaped to the instrument board. Before he reached it, and while DuQuesne, Crane, and Dunark were hastening to the guns, the whine of giant helicopter-screws was plainly heard. A ranging shell from the first warship, sighted a little low, exploded against the side of the dock beneath them. He reached the levers just as the second shell screamed through the air a bare four feet above them. As he shot the Skylark into the air under five notches of power, a steady stream of the huge bombs poured through the spot where, an instant before, the vessel had been. Crane and DuQuesne aimed several shots at the battleships, which were approaching from all sides, but the range was so extreme that no damage was done.

They heard the continuous chattering of the machine gun operated by the Kofedix, however, and turned toward him. He was shooting, not at the warships, but at the city rapidly growing smaller beneath them; moving the barrel of the rifle in a tiny spiral; spraying the entire city with death and destruction! As they looked, the first of the shells reached the ground, just as Dunark ceased firing for lack of ammunition. They saw the palace disappear as if by magic, being instantly blotted out in a cloud of dust—a cloud which, with a spiral motion of dizzying rapidity, increased in size until it obscured the entire city.

Having attained sufficient altitude to be safe from any possible pursuit and out of range of even the heaviest guns, Seaton stopped the vessel and went out into the main compartment to consult with the other members of the group, about their next move.

"It sure does feel good to get a breath of cool air, folks," he said, as he drew with relief a deep breath of the air, which, at that great elevation, was of an icy temperature and very thin. He glanced at the little group of Kondalians as he spoke, then leaped back to the instrument board with an apology on his lips—they were gasping for

breath and shivering with the cold. He switched on the heating coils and dropped the Skylark rapidly in a long descent toward the ocean.

"If that is the temperature you enjoy, I understand at last why you wear clothes," said the Kofedix, as soon as he could talk.

"Do not your planes fly up into the regions of low temperature?" asked Crane.

"Only occasionally, and all high-flying vessels are enclosed and heated to our normal temperature. We have heavy wraps, but we dislike to wear them so intensely that we never subject ourselves to any cold."

"Well, there's no accounting for tastes," returned Seaton, "but I can't hand your climate a thing. It's hotter even than Washington in August; 'and that,' as the poet feelingly remarked, 'is going some!'

"But there's no reason for sitting here in the dark," he continued, as he switched on the powerful daylight lamps which lighted the vessel with the nearest approach to sunlight possible to produce. As soon as the lights were on, Dorothy looked intently at the strange women.

"Now we can see what color they really are," she explained to her lover in a low voice. "Why, they aren't so very different from what they were before, except that the colors are much softer and more pleasing. They really are beautiful, in spite of being green. Don't you think so, Dick?"

"They're a handsome bunch, all right," he agreed, and they were. Their skins were a light, soft green, tanned to an olive shade by their many fervent suns. Their teeth were a brilliant and shining grass-green. Their eyes and their long, thick hair were a glossy black.

The Kondalians looked at the Earthly visitors and at each other, and the women uttered exclamations of horror.

"What a frightful light?" exclaimed Sitar. "Please shut it off. I would rather be in total darkness than look like this!"

"What's the matter, Sitar?" asked the puzzled Dorothy as Seaton turned off the lights. "You look perfectly stunning in this light."

"They see things differently than we do," explained Seaton. "Their optic nerves react differently than ours do. While we look all right to them, and they look all right to us, in both kinds of light, they look just as different to themselves under our daylight lamps as we do to ourselves in their green light. Is that explanation clear?"

"It's clear enough as far as it goes, but what do they look like to themselves?"

"That's too deep for me—I can't explain it, any better than you can. Take the Osnomian color 'mlap,' for instance. Can you describe it?"

"It's a kind of greenish orange—but it seems as though it ought not to look like that color either."

"That's it, exactly. From the knowledge you received from the educator, it should be a brilliant purple. That is due to the difference in the optic nerves, which explains why we see things so differently from the way the Osnomians do. Perhaps they can describe the way they look to each other in our white light."

"Can you, Sitar?" asked Dorothy.

"One word describes it—'horrible.'" replied the Kondalian princess, and her husband added:

"The colors are distorted and unrecognizable, just as your colors are to your eyes in our light."

"Well, now that the color question is answered, let's get going. I pretty nearly asked you the way, Dunark—forgot that I know it as well as you do."

The Skylark set off at as high an altitude as the Osnomians could stand. As they neared the ocean several great Mardonalian battleships, warned of the escape, sought to intercept them; but the Skylark hopped over them easily, out of range of their heaviest guns, and flew onward at such speed that pursuit was not even attempted. The ocean was quickly crossed. Soon the space-car came to rest over

a great city, and Seaton pointed out the palace; which, with its landing dock nearby, was very similar to that of Nalboon, in the capital city of Mardonale.

Crane drew Seaton to one side.

"Do you think it is safe to trust these Kondalians, any more than it was the others? How would it be to stay in the Lark instead of going into the palace?"

"Yes, Mart, this bunch can be trusted. Dunark has a lot of darn queer ideas, but he's square as a die. He's our friend, and will get us the copper. We have no choice now, anyway, look at the bar. We haven't an ounce of copper left—we're down to the plating in spots. Besides, we couldn't go anywhere if we had a ton of copper, because the old bus is a wreck. She won't hold air—you could throw a cat out through the shell in any direction. She'll have to have a lot of work done on her before we can think of leaving. As to staying in her, that wouldn't help us a bit. Steel is as soft as wood to these folks—their shells would go through her as though she were made of mush. They are made of metal that is harder than diamond and tougher than rubber, and when they strike they bore in like drill-bits. If they are out to get us they'll do it anyway, whether we're here or there, so we may as well be guests. But there's no danger, Mart. You know I swapped brains with him, and I know him as well as I know myself. He's a good, square man—one of our kind of folks."

Convinced, Crane nodded his head and the Skylark dropped toward the dock. While they were still high in air, Dunark took an instrument from his belt and rapidly manipulated a small lever. The others felt the air vibrate—a peculiar, pulsating wave, which, to the surprise of the Earthly visitors, they could read without difficulty. It was a message from the Kofedix to the entire city, telling of the escape of his party and giving the news that he was accompanied by two great Karfedo from another world. Then the pulsations became unintelligible, and all knew that he had tuned his instrument away from the "general" key into the individual key of some one person.

"I just let my father, the Karfedix, know that we are coming," he explained, as the vibrations ceased.

From the city beneath them hundreds of great guns roared forth a welcome, banners and streamers hung from every possible point, and the air became tinted and perfumed with a bewildering variety of colors and scents and quivered with the rush of messages of welcome. The Skylark was soon surrounded by a majestic fleet of giant warships, who escorted her with impressive ceremony to the landing dock, while around them flitted great numbers of other aircraft. The tiny one-man helicopters darted hither and thither, apparently always in imminent danger of colliding with some of their larger neighbors, but always escaping as though by a miracle. Beautiful pleasure-planes soared and dipped and wheeled like giant gulls; and, cleaving their stately way through the numberless lesser craft; immense multiplane passenger liners partially supported by helicopter screws turned aside from their scheduled courses to pay homage to the Kofedix of Kondal.

As the Skylark approached the top of the dock, all the escorting vessels dropped away and Crane saw that instead of the brilliant assemblage he had expected to see upon the landing-place there was only a small group of persons, as completely unadorned as were those in the car. In answer to his look of surprise, the Kofedix said, with deep feeling:

"My father, mother, and the rest of the family. They know that we, as escaped captives, would be without harness or trappings, and are meeting us in the same state."

Seaton brought the vessel to the dock near the little group, and the Earthly visitors remained inside their vessel while the rulers of Kondal welcomed the sons and daughters they had given up for dead.

After the affecting reunion, which was very similar to an earthly one under similar circumstances, the Kofedix led his father up to the Skylark and his guests stepped down upon the dock.

"Friends," Dunark began, "I have told you of my father, Roban, the Karfedix of Kondal. Father, it is a great honor to present to you those who rescued us from Mardonale—Seaton, Karfedix of Knowledge; Crane, Karfedix of Wealth; Miss Vaneman; and Miss Spencer. Karfedix DuQuesne," waving his hand toward him, "is a lesser Karfedix of Knowledge, captive to the others."

"The Kofedix Dunark exaggerates our services," deprecated Seaton, "and doesn't mention the fact that he saved all our lives. But for him we all should have been killed."

The Karfedix, disregarding Seaton's remark, acknowledged the indebtedness of Kondal in heartfelt accents before he led them back to the other party and made the introductions. As all walked toward the elevators, the emperor turned to his son with a puzzled expression.

"I know from your message, Dunark, that our guests are from a distant solar system, and I can understand your accident with the educator, but I cannot understand the titles of these men. Knowledge and wealth are not ruled over. Are you sure that you have translated their titles correctly?"

"As correctly as I can—we have no words in our language to express the meaning. Their government is a most peculiar one, the rulers all being chosen by the people of the whole nation...."

"Extraordinary!" interjected the older man. "How, then, can anything be accomplished?"

"I do not understand the thing myself, it is so utterly unheard-of. But they have no royalty, as we understand the term. In America, their country, every man is equal.

"That is," he hastened to correct himself, "they are not all equal, either, as they have two classes which would rank with royalty—those who have attained to great heights of knowledge and those who have amassed great wealth. This explanation is entirely inadequate and does not give the right idea of their positions, but it is as close as I can come to the truth in our language."

"I am surprised that you should be carrying a prisoner with you, Karfedo," said Roban, addressing Seaton and Crane. "You will, of course, be at perfect liberty to put him to death in any way that pleases you, just as though you were in your own kingdoms. But perchance you are saving him so that his death will crown your home-coming?"

The Kofedix spoke in answer while Seaton, usually so quick to speak, was groping for words.

"No, father, he is not to be put to death. That is another peculiar custom of the Earth-men; they consider it dishonorable to harm a captive, or even an unarmed enemy. For that reason we must treat the Karfedix DuQuesne with every courtesy due his rank, but at the same time he is to be allowed to do only such things as may be permitted by Seaton and Crane."

"Yet they do not seem to be a weak race," mused the older man.

"They are a mighty race, far advanced in evolution," replied his son. "It is not weakness, but a peculiar moral code. We have many things to learn from them, and but few to give them in return. Their visit will mean much to Kondal."

During this conversation they had descended to the ground and had reached the palace, after traversing grounds even more sumptuous and splendid than those surrounding the palace of Nalboon. Inside the palace walls the Kofedix himself led the guests to their rooms, accompanied by the major-domo and an escort of guards. He explained to them that the rooms were all inter-communicating, each having a completely equipped bathroom.

"Complete except for cold water, you mean," said Seaton with a smile.

"There is cold water," rejoined the other, leading him into the bathroom and releasing a ten-inch stream of lukewarm water into the small swimming pool, built of polished metal, which forms part

of every Kondalian bathroom. "But I am forgetting that you like extreme cold. We will install refrigerating machines at once."

"Don't do it—thanks just the same. We won't be here long enough to make it worth while."

Dunark smilingly replied that he would make his guests as comfortable as he could, and after informing them that in one kam he would return and escort them in to koprat, took his leave. Scarcely had the guests freshened themselves when he was back, but he was no longer the Dunark they had known. He now wore a metal-and-leather harness which was one blaze of precious gems, and a leather belt hung with jeweled weapons replaced the familiar hollow girdle of metal. His right arm, between the wrist and the elbow, was almost covered by six bracelets of a transparent metal, deep cobalt-blue in color, each set with an incredibly brilliant stone of the same shade. On his left wrist he wore an Osnomian chronometer. This was an instrument resembling the odometer of an automobile, whose numerous revolving segments revealed a large and constantly increasing number—the date and time of the Osnomian day, expressed in a decimal number of the karkamo of Kondalian history.

"Greetings, oh guests from Earth! I feel more like myself, now that I am again in my trappings and have my weapons at my side. Will you accompany me to koprat, or are you not hungry?" as he attached the peculiar timepieces to the wrists of the guests, with bracelets of the deep-blue metal.

"We accept with thanks," replied Dorothy promptly. "We're starving to death, as usual."

As they walked toward the dining hall, Dunark noticed that Dorothy's eyes strayed toward his bracelets, and he answered her unasked question:

"These are our wedding rings. Man and wife exchange bracelets as part of the ceremony."

"Then you can tell whether a man is married or not, and how many wives he has, simply by looking at his arm? We should have

something like that on Earth, Dick—then married men wouldn't find it so easy to pose as bachelors!"

Roban met them at the door of the great dining hall. He also was in full panoply, and Dorothy counted ten of the heavy bracelets upon his right arm as he led them to places near his own. The room was a replica of the other Osnomian dining hall they had seen and the women were decorated with the same barbaric splendor of scintillating gems.

After the meal, which was a happy one, taking the nature of a celebration in honor of the return of the captives, DuQuesne went directly to his room while the others spent the time until the zero hour in strolling about the splendid grounds, always escorted by many guards. Returning to the room occupied by the two girls, the couples separated, each girl accompanying her lover to the door of his room.

Margaret was ill at ease, though trying hard to appear completely self-possessed.

"What is the matter, sweetheart Peggy?" asked Crane, solicitously.

"I didn't know that you...." she broke off and continued with a rush: "What did the Kofedix mean just now, when he called you the Karfedix of Wealth?"

"Well, you see, I happen to have some money...." he began.

"Then you are the great M. Reynolds Crane?" she interrupted, in consternation.

"Leave off 'the great,'" he said, then, noting her expression, he took her in his arms and laughed slightly.

"Is that all that was bothering you? What does a little money amount to between you and me?"

"Nothing—but I'm awfully glad that I didn't know it before," she replied, as she returned his caress with fervor. "That is, it means nothing if you are perfectly sure I'm not...."

Crane, the imperturbable, broke a life-long rule and interrupted her.

"Do not say that, dear. You know as well as I do that between you and me there never have been, are not now, and never shall be, any doubts or any questions."

"If I could have a real cold bath now, I'd feel fine," remarked Seaton, standing in his own door with Dorothy by his side. "I'm no blooming Englishman but in weather as hot as this I sure would like to dive into a good cold tank. How do you feel after all this excitement, Dottie? Up to standard?"

"I'm scared purple," she replied, nestling against him, "or, at least, if not exactly scared, I'm apprehensive and nervous. I always thought I had good nerves, but everything here is so horrible and unreal, that I can't help but feel it. When I'm with you I really enjoy the experience, but when I'm alone or with Peggy, especially in the sleeping-period, which is so awfully long and when it seems that something terrible is going to happen every minute, my mind goes off in spite of me into thoughts of what may happen. Why, last night, Peggy and I just huddled up to each other in a ghastly yellow funk—dreading we knew not what—the two of us slept hardly at all."

"I'm sorry, little girl," replied Seaton, embracing her tenderly, "sorrier than I can say. I know that your nerves are all right, but you haven't roughed it enough, or lived in strange environments enough, to be able to feel at home. The reason you feel safer with me is that I feel perfectly at home here myself, not that your nerves are going to pieces or anything like that. It won't be for long, though, sweetheart—as soon as we get the chariot fixed up we'll beat it back to the Earth so fast it'll make your head spin."

"Yes, I think that's the reason, lover. I hope you won't think I'm a clinging vine, but I can't help being afraid of something here every time I'm away from you. You're so self-reliant, so perfectly at ease here, that it makes me feel the same way."

"I am perfectly at ease. There's nothing to be afraid of. I've been in hundreds of worse places, right on Earth. I sure wish I could be with you all the time, sweetheart girl—only you can understand just how much I wish it—but, as I said before, it won't be long until we can be together all the time."

Dorothy pushed him into his room, followed him within it, closed the door, and put both hands on his arm.

"Dick, sweetheart," she whispered, while a hot blush suffused her face, "you're not as dumb as I thought you were—you're dumber! But if you simply won't say it, I will. Don't you know that a marriage that is legal where it is performed is legal anywhere, and that no law says that the marriage must be performed upon the Earth?"

He pressed her to his heart in a mighty embrace, and his low voice showed in every vibration the depth of the feeling he held for the beautiful woman in his arms as he replied:

"I never thought of that, sweetheart, and I wouldn't have dared mention it if I had. You're so far away from your family and your friends that it would seem...."

"It wouldn't seem anything of the kind," she broke in earnestly. "Don't you see, you big, dense, wonderful man, that it is the only thing to do? We need each other, or at least, I need you, so much now...."

"Say 'each other'; it's right," declared her lover with fervor.

"It's foolish to wait. Mother would like to have seen me married, of course; but there will be great advantages, even on that side. A grand wedding, of the kind we would simply have to have in Washington, doesn't appeal to me any more than it does to you—and it would bore you to extinction. Dad would hate it, too—it's better all around to be married here."

Seaton, who had been trying to speak, silenced her.

"I'm convinced, Dottie, have been ever since the first word. If you can see it that way I'm so glad that I can't express it. I've been scared

stiff every time I thought of our wedding. I'll speak to the Karfedix the first thing in the morning, and we'll be married tomorrow—or rather today, since it is past the zero kam," as he glanced at the chronometer upon his wrist, which, driven by wireless impulses from the master-clock in the national observatory, was clicking off the darkamo with an almost inaudible purr of its smoothly-revolving segments.

"How would it be to wake him up and have it done now?"

"Oh, Dick, be reasonable! That would never do. Tomorrow will be most awfully sudden, as it is! And Dick, please speak to Martin, will you? Peggy's even more scared than I am, and Martin, the dear old stupid, is even less likely to suggest such a thing as this kind of a wedding than you are. Peggy's afraid to suggest it to him."

"Woman!" he said in mock sternness, "Is this a put-up job?"

"It certainly is. Did you think I had nerve enough to do it without help?"

Seaton turned and opened the door.

"Mart! Bring Peggy over here!" he called, as he led Dorothy back into the girls' room.

"Heavens, Dick, be careful! You'll spoil the whole thing!"

"No, I won't. Leave it to me—I bashfully admit that I'm a regular bear-cat at this diplomatic stuff. Watch my smoke!"

"Folks," he said, when the four were together, "Dottie and I have been talking things over, and we've decided that today's the best possible date for a wedding. Dottie's afraid of these long, daylight nights, and I admit that I'd sleep a lot sounder if I knew where she was all the time instead of only part of it. She says she's willing, provided you folks see it the same way and make it double. How about it?"

Margaret blushed furiously and Crane's lean, handsome face assumed a darker color as he replied:

"A marriage here would, of course, be legal anywhere, provided we have a certificate, and we could be married again upon our return if we think it desirable. It might look as though we were taking an unfair advantage of the girls, Dick, but considering all the circumstances, I think it would be the best thing for everyone concerned."

He saw the supreme joy in Margaret's eyes, and his own assumed a new light as he drew her into the hollow of his arm.

"Peggy has known me only a short time, but nothing else in the world is as certain as our love. It is the bride's privilege to set the date, so I will only say that it cannot be too soon for me."

"The sooner the better," said Margaret, with a blush that would have been divine in any earthly light, "did you say 'today,' Dick?"

"I'll see the Karfedix as soon as he gets up," he answered, and walked with Dorothy to his door.

"I'm just too supremely happy for words," Dorothy whispered in Seaton's ear as he bade her good-night. "I won't be able to sleep or anything!"

CHAPTER XVI.

An Osnomian Marriage

Seaton awoke, hot and uncomfortable, but with a great surge of joy in his heart—this was his wedding day! Springing from the bed, he released the full stream of the "cold" water, filling the tank in a few moments. Poising lightly upon the edge, he made a clean, sharp dive, and yelled in surprise as he came snorting to the surface. For Dunark had made good his promise—the water was only a few degrees above the freezing point! After a few minutes of vigorous splashing in the icy water, he rubbed himself down with a coarse

towel, shaved, threw on his clothes, and lifted his powerful, but musical, bass voice in the wedding chorus from "The Rose Maiden."

"Rise, sweet maid, arise, arise,
Rise, sweet maid, arise, arise,
'Tis the last fair morning for thy maiden eyes,"

he sang lustily, out of his sheer joy in being alive, and was surprised to hear Dorothy's clear soprano, Margaret's pleasing contralto, and Crane's mellow tenor chime in from the adjoining room. Crane threw open the door and Seaton joined the others.

"Good morning. Dick, you sound happy," said Crane.

"Who wouldn't be? Look what's doing today," as he ardently embraced his bride-to-be. "Besides, I found some cold water this morning."

"Everyone in the palace heard you discovering it," dryly returned Crane, and the girls laughed merrily.

"It surprised me at first," admitted Seaton, "but it's great after a fellow once gets wet."

"We warmed ours a trifle," said Dorothy. "I like a cold bath myself, but not in ice-water."

All four became silent, thinking of the coming event of the day, until Crane said:

"They have ministers here, I know, and I know something of their religion, but my knowledge is rather vague. You know more about it than we do, Dick, suppose you tell us about it while we wait."

Seaton paused a moment, with an odd look on his face. As one turning the pages of an unfamiliar book of reference, he was seeking the answer to Crane's question in the vast store of Osnomian information received from Dunark. His usually ready speech came a little slowly.

"Well, as nearly as I can explain it, it's a funny kind of a mixture—partly theology, partly Darwinism, or at least, making a fetish of

evolution, and partly pure economic determinism. They believe in a Supreme Being, whom they call the First Cause—that is the nearest English equivalent—and they recognize the existence of an immortal and unknowable life-principle, or soul. They believe that the First Cause has decreed the survival of the fittest as the fundamental law, which belief accounts for their perfect physiques...."

"Perfect physiques? Why, they're as weak as children," interrupted Dorothy.

"Yes, but that is because of the smallness of the planet," returned Seaton. "You see, a man of my size weighs only eighty-six pounds here, on a spring balance, so he would need only the muscular development of a boy of twelve or so. In a contest of strength, either of you girls could easily handle two of the strongest men upon Osnome. In fact, the average Osnomian could stand up on our Earth only with the greatest difficulty. But that isn't the fault of the people; they are magnificently developed for their surroundings. They have attained this condition by centuries of weeding out the unfit. They have no hospitals for the feeble-minded or feeble-bodied—abnormal persons are not allowed to live. The same reasoning accounts for their perfect cleanliness, moral and physical. Vice is practically unknown. They believe that clean living and clean thinking are rewarded by the production of a better physical and mental type...."

"Yes, especially as they correct wrong living by those terrible punishments the Kofedix told us about," interrupted Margaret.

"That probably helps some. They also believe that the higher the type is, the faster will evolution proceed, and the sooner will mankind reach what they call the Ultimate Goal, and know all things. Believing as they do that the fittest must survive, and thinking themselves, of course, the superior type, it is ordained that Mardonale must be destroyed utterly, root and branch. They believe that the slaves are so low in the scale, millions of years behind in evolution, that they do not count. Slaves are simply intelligent and docile animals, little more than horses or oxen. Mardonalians and savages are unfit to survive and must be exterminated.

"Their ministers are chosen from the very fittest. They are the strongest, cleanest-living, and most vigorous men of this clean and vigorous nation, and are usually high army officers as well as ministers."

An attendant announced the coming of the Karfedix and his son, to pay the call of state. After the ceremonious greetings had been exchanged, all went into the dining hall for darprat. As soon as the meal was over, Seaton brought up the question of the double wedding that kokam, and the Karfedix was overjoyed.

"Karfedix Seaton," he said earnestly, "nothing could please us more than to have such a ceremony performed in our palace. Marriage between such highly-evolved persons as are you four is wished by the First Cause, whose servants we are. Aside from that, it is an unheard-of honor for any ruler to have even one karfedix married beneath his roof, and you are granting me the privilege of two! I thank you, and assure you that we will do our poor best to make the occasion memorable."

"Don't do anything fancy," said Seaton hastily. "A simple, plain wedding will do."

Unheeding Seaton's remark, the Karfedix took his wireless from its hook at his belt and sent a brief message.

"I have summoned Karbix Tarnan to perform the ceremony. Our usual time for ceremonies is just before koprat—is that time satisfactory to you?"

Assured that it was, he turned to his son.

"Dunark, you are more familiar than I with the customs of our illustrious visitors. May I ask you to take charge of the details?"

While Dunark sent a rapid succession of messages, Dorothy whispered to Seaton:

"They must be going to make a real function of our double wedding, Dick. The Karbix is the highest dignitary of the church, isn't he?"

"Yes, in addition to being the Commander-in-Chief of all the Kondalian armies. Next to the Karfedix he is the most powerful man in the empire. Something tells me, Dottie, that this is going to be SOME ceremony!"

As Dunark finished telegraphing, Seaton turned to him.

"Dorothy said, a while ago, that she would like to have enough of that tapestry-fabric for a dress. Do you suppose it could be managed?"

"Certainly. In all state ceremonials we always wear robes made out of the same fabric as the tapestries, but much finer and more delicate. I would have suggested it, but thought perhaps the ladies would prefer their usual clothing. I know that you two men do not care to wear our robes?"

"We will wear white ducks, the dressiest and coolest things we have along," replied Seaton. "Thank you for your offer, but you know how it is. We should feel out of place in such gorgeous dress."

"I understand. I will call in a few of our most expert robe-makers, who will weave the gowns. Before they come, let us decide upon the ceremony. I think you are familiar with our marriage customs, but I will explain them to make sure. Each couple is married twice. The first marriage is symbolized by the exchange of plain bracelets and lasts four karkamo, during which period divorce may be obtained at will. The children of such divorced couples formerly became wards of the state, but in my lifetime I have not heard of there being any such children—all divorces are now between couples who discover their incompatibility before children are conceived."

"That surprises me greatly," said Crane. "Some system of trial-marriage is advocated among us on Earth every few years, but they all so surely degenerate into free love that no such system has found a foothold."

"We are not troubled in that way at all. You see, before the first marriage, each couple, from the humblest peasantry to the highest royalty, must submit to a mental examination. If they are marrying for any reason at all other than love, such as any thought of trifling in the mind of the man, or if the woman is marrying him for his wealth or position, he or she is summarily executed, regardless of station."

No other questions being asked, Dunark continued:

"At the end of four karkamo the second marriage is performed, which is indissoluble. In this ceremony jeweled bracelets are substituted for the plain ones. In the case of highly-evolved persons it is permitted that the two ceremonies be combined into one. Then there is a third ceremony, used only in the marriage of persons of the very highest evolution, in which the 'eternal' vows are taken and the faidon, the eternal jewel, is exchanged. As you are all in the permitted class, you may use the eternal ceremony if you wish."

"I think we all know our minds well enough to know that we want to be married for good—the longer the better," said Seaton, positively. "We'll make it the eternal, won't we, folks?"

"I should like to ask one question," said Crane, thoughtfully. "Does that ceremony imply that my wife would be breaking her vows if she married again upon my death?"

"Far from it. Numbers of our men are killed every karkam. Their wives, if of marriageable age, are expected to marry again. Then, too, you know that most Kondalian men have several wives. No matter how many wives or husbands may be linked together in that way, it merely means that after death their spirits will be grouped into one. Just as in your chemistry," smiling in comradely fashion at Seaton, "a varying number of elements may unite to form a stable compound."

After a short pause, the speaker went on:

"Since you are from the Earth and unaccustomed to bracelets, rings will be substituted for them. The plain rings will take the place of your Earthly wedding rings, the jeweled ones that of your engagement rings. The only difference is that while we discard the plain bracelets, you will continue to wear them. Have you men any objections to wearing the rings during the ceremony? You may discard them later if you wish and still keep the marriage valid."

"Not I! I'll wear mine all my life," responded Seaton earnestly, and Crane expressed the same thought.

"There is only one more thing," added the Kofedix. "That is, about the mental examination. Since it is not your custom, it is probable that the justices would waive the ruling, especially since everyone must be examined by a jury of his own or a superior rank, so that only one man, my father alone, could examine you."

"Not in a thousand years!" replied Seaton emphatically. "I want to be examined, and have Dorothy see the record. I don't care about having her put through it, but I want her to know exactly the kind of a guy she is getting."

Dorothy protested at this, but as all four were eager that they themselves should be tested, the Karfedix was notified and Dunark clamped sets of multiple electrodes, connected to a set of instruments, upon the temples of his father, Dorothy, and Seaton. He pressed a lever, and instantly Dorothy and Seaton read each other's minds to the minutest detail, and each knew that the Karfedix was reading the minds of both.

After Margaret and Crane had been examined, the Karfedix expressed himself as more than satisfied.

"You are all of the highest evolution and your minds are all untainted by any base thoughts in your marriage. The First Cause will smile upon your unions," he said solemnly.

"Let the robe-makers appear," the Karfedix ordered, and four women, hung with spools of brilliantly-colored wire of incredible

fineness and with peculiar looms under their arms, entered the room and accompanied the two girls to their apartment.

As soon as the room was empty save for the four men, Dunark said:

"While I was in Mardonale, I heard bits of conversation regarding an immense military discovery possessed by Nalboon, besides the gas whose deadly effects we felt. I could get no inkling of its nature, but feel sure that it is something to be dreaded. I also heard that both of these secrets had been stolen from Kondal, and that we were to be destroyed by our own superior inventions."

The Karfedix nodded his head gloomily.

"That is true, my son—partly true, at least. We shall not be destroyed, however. Kondal shall triumph. The discoveries were made by a Kondalian, but I am as ignorant as are you concerning their nature. An obscure inventor, living close to the bordering ocean, was the discoverer. He was rash enough to wireless me concerning them. He would not reveal their nature, but requested a guard. The Mardonalian patrol intercepted the message and captured both him and his discoveries before our guard could arrive."

"That's easily fixed," suggested Seaton. "Let's get the Skylark fixed up, and we'll go jerk Nalboon out of his palace—if he's still alive—bring him over here, and read his mind."

"That might prove feasible," answered the Kofedix, "and in any event we must repair the Skylark and replenish her supply of copper immediately. That must be our first consideration, so that you, our guests, will have a protection in any emergency."

The Karfedix went to his duties and the other three made their way to the wrecked space-car. They found that besides the damage done to the hull, many of the instruments were broken, including one of the object-compasses focused upon the Earth.

"It's a good thing you had three of them, Mart. I sure hand it to you for preparedness," said Seaton, as he tossed the broken instruments

out upon the dock. Dunark protested at this treatment, and placed the discarded instruments in a strong metal safe, remarking:

"These things may prove useful at some future time."

"Well, I suppose the first thing to do is to get some powerful jacks and straighten these plates," said Seaton.

"Why not throw away this soft metal, steel, and build it of arenak, as it should be built? You have plenty of salt," suggested Dunark.

"Fine! We have lots of salt in the galley, haven't we, Mart?"

"Yes, nearly a hundred pounds. We are stocked for emergencies, with two years' supply of food, you know."

Dunark's eyes opened in astonishment at the amount mentioned, in spite of his knowledge of earthly conditions. He started to say something, then stopped in confusion, but Seaton divined his thought.

"We can spare him fifty pounds as well as not, can't we, Mart?"

"Certainly. Fifty pounds of salt is a ridiculously cheap price for what he is doing for us, even though it is very rare here."

Dunark acknowledged the gift with shining eyes and heartfelt, but not profuse, thanks, and bore the precious bag to the palace under a heavy escort. He returned with a small army of workmen, and after making tests to assure himself that the power-bar would work as well through arenak as through steel, he instructed the officers concerning the work to be done. As the wonderfully skilled mechanics set to work without a single useless motion, the prince stood silent, with a look of care upon his handsome face.

"Worrying about Mardonale, Dunark?"

"Yes. I cannot help wondering what that terrible new engine of destruction is, which Nalboon now has at his command."

"Say, why don't you build a bus like the Skylark, and blow Mardonale off the map?"

"Building the vessel would be easy enough, but X is as yet unknown upon Osnome."

"We've got a lot of it...."

"I could not accept it. The salt was different, since you have plenty. X, however, is as scarce upon Earth as salt is upon Osnome."

"Sure you can accept it. We stopped at a planet that has lots of it, and we've got an object-compass pointing at it so that we can go back and get more of it any time we want it. We've got more of it on hand now than we're apt to need for a long time, so have a hunk and get busy," and he easily carried one of the lumps out of his cabin and tossed it upon the dock, from whence it required two of Kondal's strongest men to lift it.

The look of care vanished from the face of the prince and he summoned another corps of mechanics.

"How thick shall the walls be? Our battleships are armed with arenak the thickness of a hand, but with your vast supply of salt you may have it any thickness you wish, since the materials of the matrix are cheap and abundant."

"One inch would be enough, but everything in the bus is designed for a four-foot shell, and if we change it from four feet we'll have to redesign our guns and all our instruments. Let's make it four feet."

Seaton turned to the crippled Skylark, upon which the first crew of Kondalian mechanics were working with skill and with tools undreamed-of upon Earth. The whole interior of the vessel was supported by a complex falsework of latticed metal, then the four-foot steel plates and the mighty embers, the pride of the great MacDougall, were cut away as though they were made of paper by revolving saws and enormous power shears. The sphere, grooved for the repellers and with the members, braces, and central machinery complete, of the exact dimensions of the originals, was rapidly moulded of a stiff, plastic substance resembling clay. This matrix

soon hardened into a rock-like mass into which the doors, machine-gun emplacements, and other openings were carefully cut. All surfaces were then washed with a dilute solution of salt, which the workmen handled as though it were radium. Two great plates of platinum were clamped into place upon either side of the vessel, each plate connected by means of silver cables as large as a man's leg to the receiving terminal of an enormous wireless power station. The current was applied and the great spherical mass apparently disappeared, being transformed instantly into the transparent metal arenak. Then indeed had the Earth-men a vehicle such as had never been seen before! A four-foot shell of metal five hundred times as strong and hard as the strongest and hardest steel, cast in one piece with the sustaining framework designed by the world's foremost engineer—a structure that no conceivable force could deform or injure, housing an inconceivable propulsive force!

The falsework was rapidly removed and the sustaining framework was painted with opaque varnish to render it plainly visible. At Seaton's suggestion the walls of the cabins were also painted, leaving transparent several small areas to serve as windows.

The second work-period was drawing to a close, and as Seaton and Crane were to be married before koprat, they stopped work. They marveled at the amount that had been accomplished, and the Kofedix told them:

"Both vessels will be finished tomorrow, except for the controlling instruments, which we will have to make ourselves. Another crew will work during the sleeping-period, installing the guns and other fittings. Do you wish to have your own guns installed, or guns of our pattern? You are familiar with them now."

"Our own, please. They are slower and less efficient than yours, but we are used to them and have a lot of X-plosive ammunition for them," replied Seaton, after a short conference with Crane.

After instructing the officers in charge of the work, the three returned to the palace, the hearts of two of them beating high in anticipation. Seaton went into Crane's room, accompanied by two attendants bearing his suitcase and other luggage.

"We should have brought along dress clothes, Mart. Why didn't you think of that, too?"

"Nothing like this ever entered my mind. It is a good thing we brought along ducks and white soft shirts. I must say that this is extremely informal garb for a state wedding, but since the natives are ignorant of our customs, it will not make any difference."

"That's right, too—we'll make 'em think it's the most formal kind of dress. Dunark knows what's what, but he knows that full dress would be unbearable here. We'd melt down in a minute. It's plenty hot enough as it is, with only duck trousers and sport-shirts on. They'll look green instead of white, but that's a small matter."

Dunark, as best man, entered the room some time later.

"Give us a look, Dunark," begged Seaton, "and see if we'll pass inspection. I was never so rattled in my life."

They were clad in spotless white, from their duck oxfords to the white ties encircling the open collars of their tennis shirts. The two tall figures—Crane's slender, wiry, at perfect ease; Seaton's broad-shouldered, powerful, prowling about with unconscious, feline suppleness and grace—and the two handsome, high-bred, intellectual faces, each wearing a look of eager happiness, fully justified Dunark's answer.

"You sure will do!" he pronounced enthusiastically, and with Seaton's own impulsive good will he shook hands and wished them an eternity of happiness.

"When you have spoken with your brides," he continued, "I shall be waiting to escort you into the chapel. Sitar told me to say that the ladies are ready."

Dorothy and Margaret had been dressed in their bridal gowns by Sitar and several other princesses, under the watchful eyes of the Karfedir herself. Sitar placed the two girls side by side and drew off to survey her work.

"You are the loveliest creatures in the whole world!" she cried.

They looked at each other's glittering gowns, then Margaret glanced at Dorothy's face and a look of dismay overspread her own.

"Oh, Dottie!" she gasped. "Your lovely complexion! Isn't it terrible for the boys to see us in this light?"

There was a peal of delighted laughter from Sitar and she spoke to one of the servants, who drew dark curtains across the windows and pressed a switch, flooding the room with brilliant white light.

"Dunark installed lamps like those of your ship for you," she explained with intense satisfaction. "I knew in advance just how you would feel about your color."

Before the girls had time to thank their thoughtful hostess she disappeared and their bridegrooms stood before them. For a moment no word was spoken. Seaton stared at Dorothy hungrily, almost doubting the evidence of his senses. For white was white, pink was pink, and her hair shone in all its natural splendor of burnished bronze.

In their wondrous Osnomian bridal robes the beautiful Earth-maidens stood before their lovers. Upon their feet were jeweled slippers. Their lovely bodies were clothed in softly shimmering garments that left their rounded arms and throats bare—garments infinitely more supple than the finest silk, thick-woven of metallic threads of such fineness that the individual wires were visible only under a lens; garments that floated and clung about their perfect forms in lines of exquisite grace. For black-haired Margaret, with her ivory skin, the Kondalian princess had chosen a background of a rare white metal, upon which, in complicated figures, glistened numberless jewels of pale colors, more brilliant than diamonds. Dorothy's dress was of a peculiar, dark-green shade, half-hidden by

an intricate design of blazing green gems—the strange, luminous jewels of this strange world. Both girls wore their long, heavy hair unbound, after the Kondalian bridal fashion, brushed until it fell like mist about them and confined at the temples by metallic bands entirely covered with jewels.

Seaton looked from Dorothy to Margaret and back again; looked down into her violet eyes, deep with wonder and with love, more beautiful than any jewel in all her gorgeous costume. Unheeding the presence of the others, she put her dainty hands upon his mighty shoulders and stood on tiptoe.

"I love you, Dick. Now and always, here or at home or anywhere in the Universe. We'll never be parted again," she whispered, and her own beloved violin had no sweeter tones than had her voice.

A few minutes later, her eyes wet and shining, she drew herself away from him and glanced at Margaret.

"Isn't she the most beautiful thing you ever laid eyes on?"

"No," Seaton answered promptly, "she is not—but poor old Mart thinks she is!"

Accompanied by the Karfedix and his son, Seaton and Crane went into the chapel, which, already brilliant, had been decorated anew with even greater splendor. Glancing through the wide arches they saw, for the first time, Osnomians clothed. The great room was filled with the highest nobility of Kondal, wearing their heavily-jeweled, resplendent robes of state. Every color of the rainbow and numberless fantastic patterns were there, embodied in the soft, lustrous, metallic fabric.

As the men entered one door Dorothy and Margaret, with the Karfedir and Sitar, entered the other, and the entire assemblage rose to its feet and snapped into the grand salute. Moving to the accompaniment of strange martial music from concealed instruments, the two parties approached each other, meeting at the

raised platform or pulpit where Karbix Tarnan, a handsome, stately, middle-aged man who carried easily his hundred and fifty karkamo of age, awaited them. As he raised his arms, the music ceased.

It was a solemn and wonderfully impressive spectacle. The room, of burnished metal, with its bizarre decorations wrought in scintillating gems; the constantly changing harmony of colors as the invisible lamps were shifted from one shade to another; the group of mighty nobles standing rigidly at attention in a silence so profound that it was an utter absence of everything audible as the Karbix lifted both arms in a silent invocation of the great First Cause—all these things deepened the solemnity of that solemn moment.

When Tarnan spoke, his voice, deep with some great feeling, inexplicable even to those who knew him best, carried clearly to every part of the great chamber.

"Friends, it is our privilege to assist today in a most notable event, the marriage of four personages from another world. For the first time in the history of Osnome, one karfedix has the privilege of entertaining the bridal party of another. It is not for this fact alone, however, that this occasion is to be memorable. A far deeper reason is that we are witnessing, possibly for the first time in the history of the Universe, the meeting upon terms of mutual fellowship and understanding of the inhabitants of two worlds separated by unthinkable distances of trackless space and by equally great differences in evolution, conditions of life, and environment. Yet these strangers are actuated by the spirit of good faith and honor which is instilled into every worthy being by the great First Cause, in the working out of whose vast projects all things are humble instruments.

"In honor of the friendship of the two worlds, we will proceed with the ceremony.

"Richard Seaton and Martin Crane, exchange the plain rings with Dorothy Vaneman and Margaret Spencer."

They did so, and repeated, after the Karbix, simple vows of love and loyalty.

"May the First Cause smile upon this temporary marriage and render it worthy of being made permanent. As a lowly servant of the all-powerful First Cause I pronounce you two, and you two, husband and wife. But we must remember that the dull vision of mortal man cannot pierce the veil of futurity, which is as crystal to the all-beholding eye of the First Cause. Though you love each other truly, unforeseen things may come between you to mar the perfection of your happiness. Therefore a time is granted you during which you may discover whether or not your unions are perfect."

A pause ensued, then Tarnan went on:

"Martin Crane, Margaret Spencer, Richard Seaton, and Dorothy Vaneman, you are before us to take the final vows which shall bind your bodies together for life and your spirits together for eternity. Have you considered the gravity of this step sufficiently to enter into this marriage without reservation?"

"I have," solemnly replied the four, in unison.

"Exchange the jeweled rings. Do you, Richard Seaton and Dorothy Vaneman; and you, Martin Crane and Margaret Spencer; individually swear, here in the presence of the First Cause and that of the Supreme Justices of Kondal, that you will be true and loyal, each helping his chosen one in all things, great and small; that never throughout eternity, in thought or in action, will either your body or your mind or your conscious spirit stray from the path of fairness and truth and honor?"

"I do."

"I pronounce you married with the eternal marriage. Just as the faidon which you each now wear—the eternal jewel which no force of man, however applied, has yet been able to change or deform in any particular; and which continues to give off its inward light without change throughout eternity—shall endure through endless cycles of time after the metal of the ring which holds it shall have crumbled in decay: even so shall your spirits, formerly two, now one and indissoluble, progress in ever-ascending evolution throughout

eternity after the base material which is your bodies shall have returned to the senseless dust from whence it arose."

The Karbix lowered his arms and the bridal party walked to the door through a double rank of uplifted weapons. From the chapel they were led to another room, where the contracting parties signed their names in a register. The Kofedix then brought forward two marriage certificates—heavy square plates of a brilliant purple metal, beautifully engraved in parallel columns of English and Kondalian script, and heavily bordered with precious stones. The principals and witnesses signed below each column, the signatures being deeply engraved by the royal engraver. Leaving the registry, they were escorted to the dining hall, where a truly royal repast was served. Between courses the highest nobles of the nation welcomed the visitors and wished them happiness in short but earnest addresses. After the last course had been disposed of, the Karbix rose at a sign from the Karfedix and spoke, his voice again agitated by the emotion which had puzzled his hearers during the marriage service.

"All Kondal is with us here in spirit, trying to aid us in our poor attempts to convey our welcome to these our guests, of whose friendship no greater warrant could be given than their willingness to grant us the privilege of their marriage. Not only have they given us a boon that will make their names revered throughout the nation as long as Kondal shall exist, but they have also been the means of showing us plainly that the First Cause is upon our side, that our age-old institution of honor is in truth the only foundation upon which can be built a race fitted to survive. At the same time they have been the means of showing us that our hated foe, entirely without honor, building his race upon a foundation of bloodthirsty savagery alone, is building wrongly and must perish utterly from the face of Osnome."

His hearers listened, impressed by his earnestness, but plainly not understanding his meaning.

"You do not understand?" he went on, with a deep light shining in his eyes. "It is inevitable that two peoples inhabiting worlds so widely separated as are our two should be possessed of widely-varying knowledge and abilities, and these strangers have already made it possible for us to construct engines of destruction which shall obliterate Mardonale completely...." A fierce shout of joy interrupted the speaker and the nobles sprang to their feet, saluting the visitors with upraised weapons. As soon as they had reseated themselves, the Karbix continued:

"That is the boon. The vindication of our system of evolution is easily explained. The strangers landed first upon Mardonale. Had Nalboon met them in honor, he would have gained the boon. But he, with the savagery characteristic of his evolution, attempted to kill his guests and steal their treasures, with what results you already know. We, on our part, in exchange for the few and trifling services we have been able to render them, have received even more than Nalboon would have obtained, had his plans not been nullified by their vastly superior state of evolution."

The orator seated himself and there was a deafening clamor of cheering as the nobles formed themselves into an escort of honor and conducted the two couples to their apartments.

Alone in their room, Dorothy turned to her husband with tears shining in her beautiful eyes.

"Dick, sweetheart, wasn't that the most wonderful thing that anybody ever heard of? Using the word in all its real meaning, it was indescribably grand, and that old man is simply superb. It makes me ashamed of myself to think that I was ever afraid or nervous here."

"It sure was all of that, Dottie mine, little bride of an hour. The whole thing gets right down to where a fellow lives—I've got a lump in my throat right now so big that it hurts me to think. Earthly marriages are piffling in comparison with that ceremony. It's no wonder they're happy, after taking those vows—especially as they don't have to take them until after they are sure of themselves.

"But we're sure already, sweetheart," as he embraced her with all the feeling of his nature. "Those vows are not a bit stronger than the ones we have already exchanged—bodily and mentally and spiritually we are one, now and forever."

CHAPTER XVII.

Bird, Beast, or Fish?

"These jewels rather puzzle me, Dick. What are they?" asked Martin, as the four assembled, waiting for the first meal. As he spoke he held up his third finger, upon which gleamed the royal jewel of Osnome in its splendid Belcher mounting of arenak as transparent as the jewel itself and having the same intense blue color. "I know the name, 'faidon,' but that's all I seem to know."

"That's about all that anybody knows about them. It is a naturally-occurring, hundred-faceted crystal, just as you see it there—deep blue, perfectly transparent, intensely refractive, and constantly emitting that strong, blue light. It is so hard that it cannot be worked, cut, or ground. No amount of the hardest known abrasive will even roughen its surface. No blow, however great, will break it—it merely forces its way into the material of the hammer, however hard the hammer may be. No extremity of either heat or cold affects it in any degree, it is the same when in the most powerful electric arc as it is when immersed in liquid helium."

"How about acids?"

"That is what I am asking myself. Osnomians aren't much force at chemistry. I'm going to try to get hold of another one, and see if I can't analyze it, just for fun. I can't seem to convince myself that a real atomic structure could be that large."

"No, it is rather large for an atom," and turning to the two girls, "How do you like your solitaires?"

"They're perfectly beautiful, and the Tiffany mounting is exquisite," replied Dorothy, enthusiastically, "but they're so awfully big! They're as big as ten-carat diamonds, I do believe."

"Just about," replied Seaton, "but at that, they're the smallest Dunark could find. They have been kicking around for years, he says—so small that nobody wanted them. They wear big ones on their bracelets, you know. You sure will make a hit in Washington, Dottie. People will think you're wearing a bottle-stopper until they see it shining in the dark, then they'll think it's an automobile headlight. But after a few jewelers have seen these stones, one of them will be offering us five million dollars apiece for them, trying to buy them for some dizzy old dame who wants to put out the eyes of some of her social rivals. Yes? No?"

"That's about right, Dick," replied Crane, and his face wore a thoughtful look. "We can't keep it secret that we have a new jewel, since all four of us will be wearing them continuously, and anyone who knows jewels at all will recognize these as infinitely superior to any known Earthly jewel. In fact, they may get some of us into trouble, as fabulously valuable jewels usually do."

"That's true, too. So we'll let it out casually that they're as common as mud up here—that we're just wearing them for sentiment, which is true, and that we're thinking of bringing back a shipload to sell for parking lights."

"That would probably keep anyone from trying to murder our wives for their rings, at least."

"Have you read your marriage certificate, Dick?" asked Margaret.

"Not yet. Let's look at it, Dottie."

She produced the massive, heavily-jeweled document, and the auburn head and the brown one were very close to each other as they read together the English side of the certificate. Their vows were there, word for word, with their own signatures beneath them, all deeply engraved into the metal. Seaton smiled as he saw the legal form engraved below their signatures, and read aloud:

"I, the Head of the Church and the Commander-in-Chief of the armed forces of Kondal, upon the planet Osnome, certify that I have this day, in the city of Kondalek, of said nation and planet, joined in indissoluble bonds of matrimony, Richard Ballinger Seaton, Doctor of Philosophy, and Dorothy Lee Vaneman; Doctor of Music; both of the city of Washington, District of Columbia, United States of America, upon the planet Earth, in strict compliance with the marriage laws, both of Kondal and of the United States of America.

TARNAN."

Witnesses:
ROBAN, Emperor of Kondal.
TURAL, Empress of Kondal.
DUNARK, Crown Prince of Kondal.
SITAR, Crown Princess of Kondal.
MARC C. DUQUESNE, Ph. D., Washington, D. C.

"That is SOME document," remarked Seaton. "Probably a lawyer could find fault with his phraseology, but I'll bet that this thing would hold in any court in the world. Think you'll get married again when we get back, Mart?"

Both girls protested, and Crane answered:

"No, I think not. Our ceremony would be rather an anticlimax after this one, and this one will undoubtedly prove legal. I intend to register this just as it is, and get a ruling from the courts. But it is time for breakfast. Pardon me—I should have said 'darprat,' for it certainly is not breakfast-time by Washington clocks. My watch says that it is eleven-thirty P. M."

"This system of time is funny," remarked Dorothy. "I just can't get used to having no night, and...."

"And it's such a long time between eats, as the famous governor said about the drinks," broke in Seaton.

"How did you know what I was going to say, Dick?"

"Husbandly intuition," he grinned, "aided and abetted by a normal appetite that rebels at seventeen hours between supper and breakfast, and nine hours between the other meals. Well, it's time to eat—let's go!"

After eating, the men hurried to the Skylark. During the sleeping-period the vessel had been banded with the copper repellers: the machine guns and instruments, including the wonderful Osnomian wireless system, had been installed; and, except for the power-bars, she was ready for a voyage. The Kondalian vessel was complete, even to the cushions, but was without instruments.

After a brief conversation with the officer in charge, Dunark turned to Seaton.

"Didn't you find that your springs couldn't stand up under the acceleration?"

"Yes, they flattened out dead."

"The Kolanix Felan, in charge of the work, thought so, and substituted our compound-compensated type, made of real spring metal, for them. They'll hold you through any acceleration you can live through."

"Thanks, that's fine. What's next, instruments?"

"Yes. I have sent a crew of men to gather up what copper they can find—you know that we use practically no metallic copper, as platinum, gold, and silver are so much better for ordinary purposes—and another to erect a copper-smelter near one of the mines which supply the city with the copper sulphate used upon our tables. While they are at work I think I will work on the instruments, if you two will be kind enough to help me."

Seaton and Crane offered to supply him with instruments from their reserve stock, but the Kofedix refused to accept them, saying that he

would rather have their help in making them, so that he would thoroughly understand their functions. The electric furnaces were rapidly made ready and they set to work; Crane taking great delight in working that hitherto rare and very refractory metal, iridium, of which all the Kondalian instruments were to be made.

"They have a lot of our rare metals here, Dick."

"They sure have. I'd like to set up a laboratory and live here a few years—I'd learn something about my specialty or burst. They use gold and silver where we use copper, and platinum and its alloys where we use iron and soft steel. All their weapons are made of iridium, and all their most highly-tempered tools, such as their knives, razors, and so on, are made of opaque arenak. I suppose you've noticed the edge on your razor?"

"How could I help it? It is hard to realize that a metal can be so hard that it requires forty years on a diamond-dust abrasive machine to hone a razor—or that once honed, it shaves generation after generation of men without losing in any degree its keenness."

"I can't understand it, either—I only know that it's so. They have all our heavy metals in great abundance, and a lot more that we don't know anything about on Earth, but they apparently haven't any light metals at all. It must be that Osnome was thrown off the parent sun late, so that the light metals were all gone?"

"Something like that, possibly."

The extraordinary skill of the Kofedix made the manufacture of the instruments a short task, and after Crane had replaced the few broken instruments of the Skylark from their reserve stock, they turned their attention to the supply of copper that had been gathered. They found it enough for only two bars.

"Is this all we have?" asked Dunark, sharply.

"It is, your Highness," replied the Kolanix. "That is every scrap of metallic copper in the city."

"Oh, well, that'll be enough to last until we can smelt the rest," said Seaton. "With one bar apiece we're ready for anything Mardonale can start. Let 'em come!"

The bars were placed in the containers and both vessels were tried out, each making a perfect performance. Upon the following kokam, immediately after the first meal, the full party from the Earth boarded the Skylark and accompanied the Kofedix to the copper smelter. Dunark himself directed the work of preparing the charges and the molds, though he was continually being interrupted by wireless messages in code and by messengers bearing tidings too important to trust into the air.

"I hope you will excuse all of these delays," said Dunark, after the twentieth interruption, "but...."

"That's all right, Dunark. We know that you're a busy man."

"I can tell you about it, but I wouldn't want to tell many people. With the salt you gave us, I am preparing a power-plant that will enable us to blow Mardonale into...."

He broke off as a wireless call for help sounded. All listened intently, learning that a freight-plane was being pursued by a karlon a few hundred miles away.

"Now's the time for you to study one, Dunark!" Seaton exclaimed. "Get your gang of scientists out here while we go get him and drag him in!"

As Dunark sent the message, the Skylark's people hurried aboard, and Seaton drove the vessel toward the calls for help. With its great speed it reached the monster before the plane was overtaken. Focusing the attractor upon the enormous metallic beak of the karlon, Seaton threw on the power and the beast halted in midair as it was jerked backward and upward. As it saw the puny size of the attacking Skylark, it opened its cavernous mouth in a horrible roar and rushed at full speed. Seaton, unwilling to have the repellers

stripped from the vessel, turned on the current actuating them. The karlon was hurled backward to the point of equilibrium of the two forces, where it struggled demoniacally.

Seaton carried his captive back to the smelter, where finally, by judicious pushing and pulling, he succeeded in turning the monster flat upon its back and pinning it to the ground in spite of its struggles to escape.

Soon the scientists arrived and studied the animal thoroughly, at as close a range as its flailing arms permitted.

"I wish we could kill him without blowing him to bits," wirelessed Dunark. "Do you know any way of doing it?"

"We could if we had a few barrels of ether, or some of our own poison gases, but they are all unknown here and it would take a long time to build the apparatus to make them. I'll see if I can't tire him out and get him that way as soon as you've studied him enough. We may be able to find out where he lives, too."

The scientists having finished their observations, Seaton jerked the animal a few miles into the air and shut off the forces acting upon it. There was a sudden crash, and the karlon, knowing that this apparently insignificant vessel was its master, turned in headlong flight.

"Have you any idea what caused the noise just then, Dick?" asked Crane; who, with characteristic imperturbability, had taken out his notebook and was making exact notes of all that transpired.

"I imagine we cracked a few of his plates," replied Seaton with a laugh, as he held the Skylark in place a few hundred feet above the fleeing animal.

Pitted for the first time in its life against an antagonist, who could both outfly and outfight it, the karlon redoubled its efforts and fled in a panic of fear. It flew back over the city of Kondalek, over the outlying country, and out over the ocean, still followed easily by the Skylark. As they neared the Mardonalian border, a fleet of warships rose to contest the entry of the monster. Seaton, not wishing to let

the foe see the rejuvenated Skylark, jerked his captive high into the thin air. As soon as it was released, it headed for the ocean in an almost perpendicular dive, while Seaton focused an object-compass upon it.

"Go to it, old top," he addressed the plunging monster. "We'll follow you clear to the bottom of the ocean if you go that far!"

There was a mighty double splash as the karlon struck the water, closely followed by the Skylark. The girls gasped as the vessel plunged below the surface at such terrific speed, and seemed surprised that it had suffered no injury and that they had felt no jar. Seaton turned on the powerful searchlights and kept close enough so that he could see the monster through the transparent walls. Deeper and deeper the quarry dove, until it was plainly evident to the pursuers that it was just as much at home in the water as it was in the air. The beams of the lights revealed strange forms of life, among which were huge, staring-eyed fishes, which floundered about blindly in the unaccustomed glare. As the karlon bored still deeper, the living things became scarcer, but still occasional fleeting glimpses were obtained of the living nightmares which inhabited the oppressive depths of these strange seas. Continuing downward, the karlon plumbed the nethermost pit of the ocean and came to rest upon the bottom, stirring up a murk of ooze.

"How deep are we, Mart?"

"About four miles. I have read the pressure, but will have to calculate later exactly what depth it represents, from the gravity and density readings."

As the animal showed no sign of leaving its retreat, Seaton pulled it out with the attractor and it broke for the surface. Rising through the water at full speed, it burst into the air and soared upward to such an incredible height that Seaton was amazed.

"I wouldn't have believed that anything could fly in air this thin!" he exclaimed.

"It is thin up here," assented Crane. "Less than three pounds to the square inch. I wonder how he does it?"

"It doesn't look as though we are ever going to find out—he's sure a bear-cat!" replied Seaton, as the karlon, unable to ascend further, dropped in a slanting dive toward the lowlands of Kondal—the terrible, swampy region covered with poisonous vegetation and inhabited by frightful animals and even more frightful savages. The monster neared the ground with ever-increasing speed. Seaton, keeping close behind it, remarked to Crane:

"He'll have to flatten out pretty quick, or he'll burst something, sure."

But it did not flatten out. It struck the soft ground head foremost and disappeared, its tentacles apparently boring a way ahead of it.

Astonished at such an unlooked-for development, Seaton brought the Skylark to a stop and stabbed into the ground with the attractor. The first attempt brought up nothing but a pillar of muck, the second brought to light a couple of wings and one writhing arm, the third brought the whole animal, still struggling as strongly as it had in the first contest. Seaton again lifted the animal high into the air.

"If he does that again, we'll follow him."

"Will the ship stand it?" asked DuQuesne, with interest.

"Yes. The old bus wouldn't have, but this one can stand anything. We can go anywhere that thing can, that's a cinch. If we have enough power on, we probably won't even feel a jolt when we strike ground."

Seaton reduced the force acting upon the animal until just enough was left to keep the attractor upon it, and it again dived into the swamp. The Skylark followed, feeling its way in the total darkness, until the animal stopped, refusing to move in any direction, at a depth estimated by Crane to be about three-quarters of a mile. After

waiting some time Seaton increased the power of the attractor and tore the karlon back to the surface and into the air, where it turned on the Skylark with redoubled fury.

"We've dug him out of his last refuge and he's fighting like a cornered rat," said Seaton as he repelled the monster to a safe distance. "He's apparently as fresh as when he started, in spite of all this playing. Talk about a game fish! He doesn't intend to run any more, though, so I guess we'll have to put him away. It's a shame to bump him off, but it's got to be done."

Crane aimed one of the heavy X-plosive bullets at the savagely-struggling monster, and the earth rocked with the concussion as the shell struck its mark. They hurried back to the smelter, where Dunark asked eagerly:

"What did you find out about it?"

"Nothing much," replied Seaton, and in a few words described the actions of the karlon. "What did your savants think of it?"

"Very little that any of us can understand in terms of any other known organism. It seems to combine all the characteristics of bird, beast, and fish, and to have within itself the possibilities of both bisexual and asexual reproduction."

"I wouldn't doubt it—it's a queer one, all right."

The copper bars were cool enough to handle, and the Skylark was loaded with five times its original supply of copper, the other vessel taking on a much smaller amount. After the Kofedix had directed the officer in charge to place the remaining bars in easily-accessible places throughout the nation, the two vessels were piloted back to the palace, arriving just in time for the last meal of the kokam.

"Well, Dunark," said Seaton after the meal was over, "I'm afraid that we must go back as soon as we can. Dorothy's parents and Martin's bankers will think they are dead by this time. We should start right now, but...."

"Oh, no, you must not do that. That would rob our people of the chance of bidding you goodbye."

"There's another reason, too. I have a mighty big favor to ask of you."

"It is granted. If man can do it, consider it done."

"Well, you know platinum is a very scarce and highly useful metal with us. I wonder if you could let us have a few tons of it? And I would like to have another faidon, too—I want to see if I can't analyze it."

"You have given us a thousand times the value of all the platinum and all the jewels your vessel can carry. As soon as the foundries are open tomorrow we will go and load up your store-rooms—or, if you wish, we will do it now."

"That isn't necessary. We may as well enjoy your hospitality for one more sleeping-period, get the platinum during the first work-period, and bid you goodbye just before the second meal. How would that be?"

"Perfectly satisfactory."

The following kokam, Dunark piloted the Skylark, with Seaton, Crane, and DuQuesne as crew, to one of the great platinum foundries. The girls remained behind to get ready for their departure, and for the great ceremony which was to precede it. The trip to the foundry was a short one, and the three scientists of Earth stared at what they saw—thousands of tons of platinum, cast into bars and piled up like pig-iron, waiting to be made into numerous articles of every-day use throughout the nation. Dunark wrote out an order, which his chief attendant handed to the officer in charge of the foundry, saying:

"Please have it loaded at once."

Seaton indicated the storage compartment into which the metal was to be carried, and a procession of slaves, two men staggering under one ingot, was soon formed between the pile and the storage room.

"How much are you loading on, Dunark?" asked Seaton, when the large compartment was more than half full.

"My order called for about twenty tons, in your weight, but I changed it later—we may as well fill that room full, so that the metal will not rattle around in flight. It doesn't make any difference to us, we have so much of it. It is like your gift of the salt, only vastly smaller."

"What are you going to do with it all, Dick?" asked Crane. "That is enough to break the platinum market completely."

"That's exactly what I'm going to do," returned Seaton, with a gleam in his gray eyes. "I'm going to burst this unjustifiable fad for platinum jewelry so wide open that it'll never recover, and make platinum again available for its proper uses, in laboratories and in the industries.

"You know yourself," he rushed on hotly, "that the only reason platinum is used at all for jewelry is that it is expensive. It isn't nearly so handsome as either gold or silver, and if it wasn't the most costly common metal we have, the jewelry-wearing crowd wouldn't touch it with a ten-foot pole. Useless as an ornament, it is the one absolutely indispensable laboratory metal, and literally hundreds of laboratories that need it can't have it because over half the world's supply is tied up in jeweler's windows and in useless baubles. Then, too, it is the best thing known for contact points in electrical machinery. When the Government and all the scientific societies were abjectly begging the jewelers to let loose a little of it they refused—they were selling it to profiteering spendthrifts at a hundred and fifty dollars an ounce. The condition isn't much better right now; it's a vicious circle. As long as the price stays high it will be used for jewelry, and as long as it is used for jewelry the price will stay high, and scientists will have to fight the jewelers for what little they get."

"While somewhat exaggerated, that is about the way matters stand. I will admit that I, too, am rather bitter on the subject," said Crane.

"Bitter? Of course you're bitter. Everybody is who knows anything about science and who has a brain in his head. Anybody who claims to be a scientist and yet stands for any of his folks buying platinum jewelry ought to be shot. But they'll get theirs as soon as we get back. They wouldn't let go of it before, they had too good a thing, but they'll let go now, and get their fingers burned besides. I'm going to dump this whole shipment at fifty cents a pound, and we'll take mighty good care that jewelers don't corner the supply."

"I'm with you, Dick, as usual."

Soon the storage room was filled to the ceiling with closely-stacked ingots of the precious metal, and the Skylark was driven back to the landing dock. She alighted beside Dunark's vessel, the *Kondal*, whose gorgeously-decorated crew of high officers sprang to attention as the four men stepped out. All were dressed for the ceremonial leave-taking, the three Americans wearing their spotless white, the Kondalians wearing their most resplendent trappings.

"This formal stuff sure does pull my cork!" exclaimed Seaton to Dunark. "I want to get this straight. The arrangement was that we were to be here at this time, all dressed up, and wait for the ladies, who are coming under the escort of your people?"

"Yes. Our family is to escort the ladies from the palace here. As they leave the elevator the surrounding war-vessels will salute, and after a brief ceremony you two will escort your wives into the Skylark, Doctor DuQuesne standing a little apart and following you in. The war-vessels will escort you as high as they can go, and the Kondal will accompany you as far as our most distant sun before turning back."

For a few moments Seaton nervously paced a short beat in front of the door of the space-car.

"I'm getting more fussed every second," he said abruptly, taking out his wireless instrument. "I'm going to see if they aren't about ready."

"What seems to be the trouble, Dick? Have you another hunch, or are you just rattled?" asked Crane.

"Rattled, I guess, but I sure do want to get going," he replied, as he worked the lever rapidly.

"Dottie," he sent out, and, the call being answered, "How long will you be? We're all ready and waiting, chewing our finger-nails with impatience."

"We'll soon be ready. The Karfedix is coming for us now."

Scarcely had the tiny sounder become silent when the air was shaken by an urgently-vibrated message, and every wireless sounder gave warning.

CHAPTER XVIII

The Invasion

The pulsating air and the chattering sounders were giving the same dire warning, the alarm extraordinary of invasion, of imminent and catastrophic danger from the air.

"Don't try to reach the palace. Everyone on the ground will have time enough to hide in the deep, arenak-protected pits beneath the buildings, and you would be killed by the invaders long before you could reach the palace. If we can repel the enemy and keep them from landing, the women will be perfectly safe, even though the whole city is destroyed. If they effect a landing we are lost."

"They'll not land, then," Seaton answered grimly, as he sprang into the Skylark and took his place at the board. As Crane took out his wireless, Seaton cautioned him.

"Send in English, and tell the girls not to answer, as these devils can locate the calls within a foot and will be able to attack the right spot. Just tell them we're safe in the Skylark. Tell them to sit tight while we wipe out this gang that is coming, and that we'll call them, once in a while, when we have time, during the battle."

Before Crane had finished sending the message the crescendo whine of enormous propellers was heard. Simultaneously there was a deafening concussion and one entire wing of the palace disappeared in a cloud of dust, in the midst of which could be discerned a few flying fragments. The air was filled with Mardonalian warships. They were huge vessels, each mounting hundreds of guns, and the rain of high-explosive shells was rapidly reducing the great city to a wide-spread heap of debris.

Seaton's hand was upon the lever which would hurl the Skylark upward into the fray. Crane and DuQuesne, each hard of eye and grim of jaw, were stationed at their machine-guns.

"Something's up!" exclaimed Seaton. "Look at the Kondal!"

Something had happened indeed. Dunark sat at the board, his hand upon the power lever, and each of his crew was in place, grasping his weapon, but every man was writhing in agony, unable to control his movements. As they stared, momentarily spellbound, the entire crew ceased their agonized struggles and hung, apparently lifeless, from their supports.

"They've got to 'em some way—let's go!" yelled Seaton.

As his hand tightened upon the lever, a succession of shells burst upon the dock, wrecking it completely, all three men fancied that the world had come to an end as the stream of high explosive was directed against their vessel. But the four-foot shell of arenak was impregnable, and Seaton shot the Skylark upward into the midst of the enemy fleet. The two gunners fired as fast as they could sight their weapons, and with each shot one of the great warships was blown into fragments. The Mardonalians then concentrated the fire of their entire fleet upon their tiny opponent.

From every point of the compass, from above and below, the enemy gunners directed streams of shells against the dodging vessel. The noise was more than deafening, it was one continuous, shattering explosion, and the Earth-men were surrounded by such a blaze of fire from the exploding shells that they could not see the enemy vessels. Seaton sought to dodge the shells by a long dive toward one

side, only to find that dozens of new opponents had been launched against them—the deadly airplane-torpedoes of Osnome. Steered by wireless and carrying no crews, they were simply winged bombs carrying thousands of pounds of terrific electrical explosive—enough to kill the men inside the vessel by the concussion of the explosion, even should the arenak armor be strong enough to withstand the blow. Though much faster than the Osnomian vessels, they were slow beside the Skylark, and Seaton could have dodged a few of them with ease. As he dodged, however, they followed relentlessly, and in spite of those which were blown up by the gunners, their number constantly increased until Seaton thought of the repellers.

"'Nobody Holme' is right!" he exclaimed, as he threw on the power actuating the copper bands which encircled the hull in all directions. Instantly the torpedoes were hurled backward, exploding as the force struck them, and even the shells were ineffective, exploding harmlessly, as they encountered the zone of force. The noise of the awful detonations lessened markedly.

"Why the silence, I wonder?" asked Seaton, while the futile shells of the enemy continued to waste their force some hundreds of feet distant from their goal, and while Crane and DuQuesne were methodically destroying the huge vessels as fast as they could aim and fire. At every report one of the monster warships disappeared—its shattered fragments and the bodies of its crew hurtling to the ground. His voice could not be heard in even the lessened tumult, but he continued:

"It must be that our repellers have set up a partial vacuum by repelling even the air!"

Suddenly the shelling ceased and the Skylark was enveloped by a blinding glare from hundreds of great reflectors; an intense, searching, bluish-violet light that burned the flesh and seared through eyelids and eyeballs into the very brain.

"Ultra-violet!" yelled Seaton at the first glimpse of the light, as he threw on the power. "Shut your eyes! Turn your heads down!"

Out in space, far beyond reach of the deadly rays, the men held a short conference, then donned heavy leather-and-canvas suits, which they smeared liberally with thick red paint, and replaced the plain glasses of their helmets with heavy lenses of deep ruby glass.

"This'll stop any ultra-violet ray ever produced," exulted Seaton, as he again threw the vessel into the Mardonalian fleet. A score of the great vessels met their fate before the Skylark was located, and, although the terrible rays were again focused upon the intruder in all their intensity, the carnage continued.

In a few minutes, however, the men heard, or rather felt, a low, intense vibration, like a silent wave of sound—a vibration which smote upon the eardrums as no possible sound could smite, a vibration which racked the joints and tortured the nerves as though the whole body were disintegrating. So sudden and terrible was the effect that Seaton uttered an involuntary yelp of surprise and pain as he once more fled into the safety of space.

"What the devil was that?" demanded DuQuesne. "Was it infra-sound? I didn't suppose such waves could be produced."

"Infra-sound is right. They produce most anything here," replied Seaton, and Crane added:

"Well, about three fur suits apiece, with cotton in our ears, ought to kill any wave propagated through air."

The fur suits were donned forthwith, Seaton whispering in Crane's ear:

"I've found out something else, too. The repellers repel even the air. I'm going to shoot enough juice through them to set up a perfect vacuum outside. That'll kill those air-waves."

Scarcely were they back within range of the fleet when DuQuesne, reaching for his gun to fire the first shot, leaped backward with a yell.

"Beat it!"

Once more at a safe distance, DuQuesne explained.

"It's lucky I'm so used to handling hot stuff that from force of habit I never make close contact with anything at the first touch. That gun carried thousands of volts, with lots of amperage behind them, and if I had had a good hold on it I couldn't have let go. We'll block that game quick enough, though. Thick, dry gloves covered with rubber are all that is necessary. It's a good thing for all of us that you have those fancy condensite handles on your levers, Seaton."

"That was how they got Dunark, undoubtedly," said Crane, as he sent a brief message to the girls, assuring them that all was well, as he had been doing at every respite. "But why were we not overcome at the same time?"

"They must have had the current tuned to iridium, and had to experiment until they found the right wave for steel," Seaton explained.

"I should think our bar would have exploded, with all that current. They must have hit the copper range, too?"

Seaton frowned in thought before he answered.

"Maybe because it's induced current, and not a steady battery impulse. Anyway, it didn't. Let's go!"

"Just a minute," put in Crane. "What are they going to do next, Dick?"

"Search me. I'm not used to my new Osnomian mind yet. I recognize things all right after they happen, but I can't seem to figure ahead—it's like a dimly-remembered something that flashes up as soon as mentioned. I get too many and too new ideas at once. I know, though, that the Osnomians have defenses against all these things except this last stunt of the charged guns. That must be the new one that Mardonale stole from Kondal. The defenses are, however, purely Osnomian in character and material. As we haven't got the stuff to set them up as the Osnomians do, we'll have to do it our own

way. We may be able to dope out the next one, though. Let's see, what have they given us so far?"

"We've got to hand it to them," responded DuQuesne, admiringly. "They're giving us the whole range of wave-lengths, one at a time. They've given us light, both ultra-violet and visible, sound, infra-sound, and electricity—I don't know what's left unless they give us a new kind of X-rays, or Hertzian, or infra-red heat waves, or...."

"That's it, heat!" exclaimed Seaton. "They produce heat by means of powerful wave-generators and by setting up heavy induced currents in the armor. They can melt arenak that way."

"Do you suppose we can handle the heat with our refrigerators?" asked Crane.

"Probably. We have a lot of power, and the new arenak cylinders of our compressors will stand anything. The only trouble will be in cooling the condensers. We'll run as long as we have any water in our tanks, then go dive into the ocean to cool off. We'll try it a whirl, anyway."

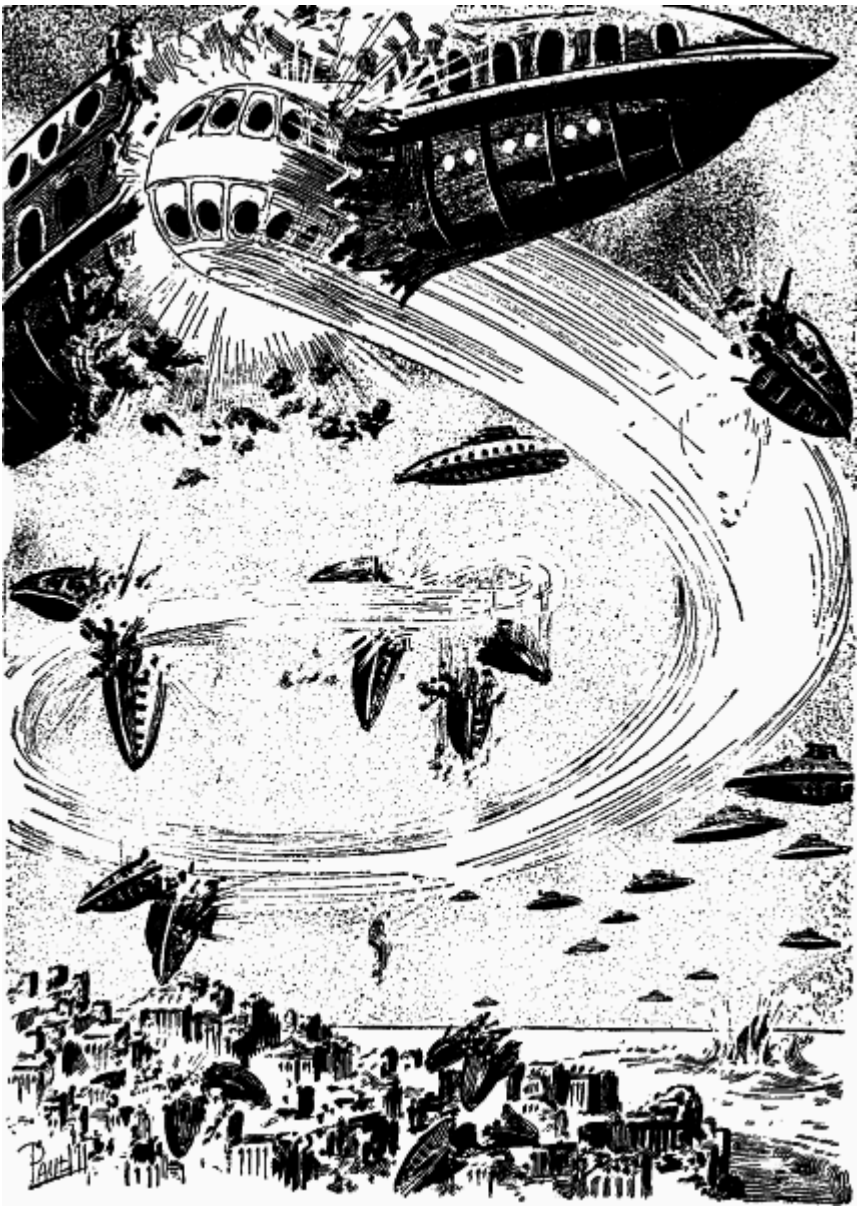
Soon the Skylark was again dealing out death and destruction in the thick of the enemy vessels, who again turned from the devastation of the helpless city to destroy this troublesome antagonist. But in spite of the utmost efforts of light-waves, sound-waves, and high-tension electricity, the space-car continued to take its terrible toll. As Seaton had foretold, the armor of the Skylark began to grow hot, and he turned on the full power of the refrigerating system. In spite of the cooling apparatus, however, the outer walls finally began to glow redly, and, although the interior was comfortably cool, the ends of the rifle-barrels, which were set flush with the surface of the revolving arenak globes which held them, softened, rendering the guns useless. The copper repellers melted and dripped off in flaming balls of molten metal, so that shells once more began to crash against the armor. DuQuesne, with no thought of quitting apparent in voice or manner, said calmly:

"Well, it looks as though they had us stopped for a few minutes. Let's go back into space and dope out something else."

Seaton, thinking intensely, saw a vast fleet of enemy reinforcements approaching, and at the same time received a wireless call directed to Dunark. It was from the grand fleet of Kondal, hastening from the bordering ocean to the defense of the city. Using Dunark's private code, Seaton told the Karbix, who was in charge of the fleet, that the enemy had a new invention which would wipe them out utterly without a chance to fight, and that he and his vessel were in control of the situation; and ordered him to see that no Kondalian ship came within battle range of a Mardonalian. He then turned to Crane and DuQuesne, his face grim and his fighting jaw set.

"I've got it doped right now. Give the Lark speed enough and she's some bullet herself. We've got four feet of arenak, they've got only an inch, and arenak doesn't even begin to soften until far above a blinding white temperature. Strap yourselves in solid, for it's going to be a rough party from now on."

They buckled their belts firmly, and Seaton, holding the bar toward their nearest antagonist, applied twenty notches of power. The Skylark darted forward and crashed completely through the great airship. Torn wide open by the forty-foot projectile, its engines wrecked and its helicopter-screws and propellers completely disabled, the helpless hulk plunged through two miles of empty air, a mass of wreckage.



The Skylark darted forward and crashed completely through the great airship.... She was an embodied thunderbolt; a huge, irresistible, indestructible projectile, directed by a keen brain inside....

Darting hither and thither, the space-car tore through vessel after vessel of the Mardonalian fleet. She was an embodied thunderbolt; a

huge, irresistible, indestructible projectile, directed by a keen brain inside it—the brain of Richard Seaton, roused to his highest fighting pitch and fighting for everything that man holds dear. Tortured by the terrible silent waves, which, now that the protecting vacuum had been destroyed, were only partially stopped by the fur suits; shaken and battered by the terrific impacts and the even greater shocks occurring every second as the direction of the vessel was changed; made sick and dizzy by the nauseating swings and lurches as the Skylark spun about the central chamber; Seaton's wonderful physique and his nerves of steel stood him in good stead in this, the supreme battle of his life, as with teeth tight-locked and eyes gray and hard as the fracture of high-carbon steel, he urged the Skylark on to greater and greater efforts.

Though it was impossible for the eye to follow the flight of the space-car, the mechanical sighting devices of the Mardonalian vessels kept her in as perfect focus as though she were stationary, and the great generators continued to hurl into her the full power of their death-dealing waves. The enemy guns were still spitting forth their streams of high-explosive shells, but unlike the waves, the shells moved so slowly compared to their target that only a few found their mark, and many of the vessels fell to the ground, riddled by the shells of their sister-ships.

With anxious eyes Seaton watched the hull of his animated cannon-ball change in color. From dull red it became cherry, and as the cherry red gave place to bright red heat, Seaton threw even more power into the bar as he muttered through his set teeth:

"Well, Seaton, old top, you've got to cut out this loafing on the job and get busy!"

In spite of his utmost exertions and in spite of the powerful ammonia plant, now exerting its full capacity, but sadly handicapped by the fact that its cooling-water was now boiling, Seaton saw the arenak shell continue to heat. The bright red was succeeded by orange, which slowly changed, first to yellow, then to

light yellow, and finally to a dazzling white; through which, with the aid of his heavy red lenses, he could still see the enemy ships. After a time he noted that the color had gone down to yellow and he thrilled with exultation, knowing that he had so reduced the numbers of the enemy fleet that their wave-generators could no longer overcome his refrigerators. After a few minutes more of the awful carnage there remained only a small fraction of the proud fleet which, thousands strong, had invaded Kondal—a remnant that sought safety in flight. But even in flight, they still fought with all their weapons, and the streams of bombs dropped from their keel-batteries upon the country beneath marked the path of their retreat with a wide swath of destruction. Half inclined to let the few remaining vessels escape, Seaton's mind changed instantly as he saw the bombs spreading devastation upon the countryside, and not until the last of the Mardonalian vessels had been destroyed did he drop the Skylark into the area of ruins which had once been the palace grounds, beside the Kondal, which was still lying as it had fallen.

After several attempts to steady their whirling senses, the three men finally were able to walk, and, opening a door, they leaped out through the opening in the still glowing wall. Seaton's first act was to wireless the news to Dorothy, who replied that they were coming as fast as they could. The men then removed their helmets, revealing faces pale and drawn, and turned to the helpless space-car.

"There's no way of getting into this thing from the outside...." Seaton began, when he saw that the Kofedix and his party were beginning to revive. Soon Dunark opened the door and stumbled out.

"I have to thank you for more than my life this time," he said, his voice shaken by uncontrollable emotion as he grasped the hands of all three men. "Though unable to move, I was conscious and saw all that happened—you kept them so busy that they didn't have a chance to give us enough to kill us outright. You have saved the lives of millions of our nation and have saved Kondal itself from annihilation."

"Oh, it's not that bad," answered Seaton, uncomfortably. "Both nations have been invaded before."

"Yes—once when we developed the ultra-violet ray, once when Mardonale perfected the machine for producing the silent sound-wave, and again when we harnessed the heat-wave. But this would have been the most complete disaster in history. The other inventions were not so deadly as was this one, and there were terrible battles, from which the victors emerged so crippled that they could not completely exterminate the vanquished, who were able to re-establish themselves in the course of time. If it had not been for you, this would have been the end, as not a Kondalian soldier could move—any person touching iridium was helpless and would have been killed."

He ceased speaking and saluted as the Karfedix and his party rounded a heap of boulders. Dorothy and Margaret screamed in unison as they saw the haggard faces of their husbands, and saw their suits, dripping with a thick substance which they knew to be red, in spite of its purplish-black color. Seaton dodged nimbly as Dorothy sought to take him in her arms, and tore off his suit.

"Nothing but red paint to stop their light-rays," he reassured her as he lifted her clear from the ground in a soul-satisfying embrace. Out of the corner of his eye he saw the Kondalians staring in open-mouthed amazement at the Skylark. Wheeling swiftly, he laughed as he saw a gigantic ball of frost and snow! Again donning his fur suit, he shut off the refrigerators and returned to his party, where the Karfedix gave him thanks in measured terms. As he fell silent, Dunark added:

"Thanks to you, the Mardonalian forces, instead of wiping us out, are themselves destroyed, while only a handful of our vessels have been lost, since the grand fleet could not arrive until the battle was over, and since the vessels that would have thrown themselves away were saved by your orders, which I heard. Thanks to you, we are not even crippled, though our capital is destroyed and the lives of some unfortunates, who could not reach the pits in time, have probably been lost.

"Thanks to you," he continued in a ringing voice, "and to the salt and the new source of power you have given us, Mardonale shall now be destroyed utterly!"

After sending out ships to relieve the suffering of the few wounded and the many homeless, Dunark summoned a corps of mechanics, who banded on new repellers and repaired the fused barrels of the machine-guns, all that was necessary to restore the Skylark to perfect condition.

Facing the party from Earth, the Karfedix stood in the ruins of his magnificent palace. Back of him were the nobles of Kondal, and still further back, in order of rank, stood a multitude of people.

"Is it permitted, oh noble Karfedo, that I reward your captive for his share in the victory?" he asked.

"It is," acquiesced Seaton and Crane, and Roban stepped up to DuQuesne and placed in his hand a weighty leather bag. He then fastened about his left wrist the Order of Kondal, the highest order of the nation.

He then clasped about Crane's wrist a heavily-jeweled, peculiarly-ornamented disk wrought of a deep ruby-red metal, supported by a heavy bracelet of the same material, the most precious metal of Osnome. At sight of the disk the nobles saluted and Seaton barely concealed a start of surprise, for it bore the royal emblem and delegated to its bearer power second only to that of the Karfedix himself.

"I bestow upon you this symbol, Karfedix Crane, in recognition of what you have this day done for Kondal. Wherever you may be upon Kondalian Osnome, which from this day henceforth shall be all Osnome, you have power as my personal representative, as my eldest son."

He drew forth a second bracelet, similar to the first except that it bore seven disks, each differently designed, which he snapped upon

Seaton's wrist as the nobles knelt and the people back of them threw themselves upon their faces.

"No language spoken by man possesses words sufficiently weighty to express our indebtedness to you, Karfedix Seaton, our guest and our savior. The First Cause has willed that you should be the instrument through which Kondal is this day made supreme upon Osnome.

In small and partial recognition of that instrumentality, I bestow upon you these symbols, which proclaim you our overlord, the ultimate authority of Osnome.

While this is not the way in which I had thought to bid you farewell, the obligations which you have heaped upon us render all smaller things insignificant. When you return, as I hope and trust you soon will, the city shall be built anew and we can welcome you as befits your station."

Lifting both arms above his head he continued:

"May the great First Cause smile upon you in all your endeavors until you solve the Mystery: may your descendants soon reach the Ultimate Goal. Goodbye."

Seaton uttered a few heartfelt words in response and the party stepped backward toward the Skylark. As they reached the vessel the standing Karfedix and the ranks of kneeling nobles snapped into the double salute—truly a rare demonstration in Kondal.

"What'll we do now?" whispered Seaton.

"Bow, of course," answered Dorothy.

They bowed, deeply and slowly, and entered their vessel. As the Skylark shot into the air with the greatest acceleration that would permit its passengers to move about, the grand fleet of Kondalian warship fired a deafening salute.

It had been planned before the start that each person was to work sixteen hours out of the twenty-four. Seaton was to drive the vessel during the first two eight-hour periods of each day. Crane was to observe the stars during the second and to drive during the third. DuQuesne was to act as observer during the first and third periods. Margaret had volunteered to assist the observer in taking his notes during her waking hours, and Dorothy appointed herself cook and household manager.

As soon as the Skylark had left Osnome, Crane told DuQuesne that he and his wife would work in the observation room until four o'clock in the afternoon, at which time the prearranged system of relief would begin, and DuQuesne retired to his room.

Crane and Margaret made their way to the darkened room which housed the instruments and seated themselves, watching intently and making no effort to conceal their emotion as first the persons beneath them, then the giant war-vessels, and finally the ruined city itself, were lost to view. Osnome slowly assumed the proportions of a large moon, grew smaller, and as it disappeared Crane began to take notes. For a few hours the seventeen suns of this strange solar system shone upon the flying space-car, after which they assumed the aspect of a widely-separated cluster of enormous stars, slowly growing smaller and smaller and shrinking closer and closer together.

At four o'clock in the afternoon, Washington time, DuQuesne relieved Crane, who made his way to the engine room.

"It is time to change shifts, Dick. You have not had your sixteen hours, but everything will be regular from now on. You two had better get some rest."

"All right," replied Seaton, as he relinquished the controls to Crane, and after bidding the new helmsman goodnight he and Dorothy went below to their cabin.

Standing at a window with their arms around each other they stared down with misty eyes at the very faint green star, which was rapidly decreasing in brilliance as the Skylark increased its already

inconceivable velocity. Finally, as it disappeared altogether, Seaton turned to his wife and tenderly, lovingly, took her in his arms.

"Littlest Girl.... Sweetheart...." he whispered, and paused, overcome by the intensity of his feelings.

"I know, husband mine," she answered, while tears dimmed her glorious eyes. "It is too deep. With nothing but words, we can't say a single thing."

CHAPTER XIX

The Return to Earth

DuQuesne's first act upon gaining the privacy of his own cabin was to open the leather bag presented to him by the Karfedix. He expected to find it filled with rare metals, with perhaps some jewels, instead of which the only metal present was a heavily-insulated tube containing a full pound of metallic radium. The least valuable items in the bag were scores of diamonds, rubies, and emeralds of enormous size and of flawless perfection. Merely ornamental glass upon Osnome, Dunark knew that they were priceless upon Earth, and had acted accordingly. To this great wealth of known gems, he had added a rich and varied assortment of the rare and strange jewels peculiar to his own world, the faidon alone being omitted from the collection. DuQuesne's habitual calmness of mind almost deserted him as he classified the contents of the bag.

The radium alone was worth millions of dollars, and the scientist in him exulted that at last his brother scientists should have ample supplies of that priceless metal with which to work, even while he was rejoicing in the price he would exact for it. He took out the familiar jewels, estimating their value as he counted them—a staggering total. The bag was still half full of the strange gems, some of them glowing like miniature lamps in the dark depths, and he made no effort to appraise them. He knew that once any competent

jeweler had compared their cold, hard, scintillating beauty with that of any Earthly gems, he could demand his own price.

"At last," he breathed to himself, "I will be what I have always longed to be—a money power. Now I can cut loose from that gang of crooks and go my own way."

He replaced the gems and the tube of radium in the bag, which he stowed away in one of his capacious pockets, and made his way to the galley.

The return voyage through space was uneventful, the Skylark constantly maintaining the same velocity with which she had started out. Several times, as the days wore on, she came within the zone of attraction of various gigantic suns, but the pilot had learned his lesson. He kept a vigilant eye upon the bar, and at the first sign of a deviation from the perpendicular he steered away, far from the source of the attraction. Not content with these precautions, the man at the board would, from time to time, shut off the power, to make sure that the space-car was not falling toward a body directly in its line of flight.

When half the distance had been covered, the bar was reversed, the travelers holding an impromptu ceremony as the great vessel spun around its center through an angle of one hundred and eighty degrees. A few days later the observers began to recognize some of the fixed stars in familiar constellations and knew that the yellowish-white star directly in their line of flight was the sun of their own solar system. After a time they saw that their course, instead of being directly toward that rapidly-brightening star, was bearing upon a barely visible star a little to one side of it. Pointing their most powerful telescope toward that point of light, Crane made out a planet, half of its disk shining brightly. The girls hastened to peer through the telescope, and they grew excited as they made out the familiar outlines of the continents and oceans upon the lighted portion of the disk.

It was not long until these outlines were plainly visible to the unaided vision. The Earth appeared as a great, softly shining, greenish half-moon, with parts of its surface obscured by fleecy wisps of cloud, and with its two gleaming ice-caps making of its poles two brilliant areas of white. The returning wanderers stared at their own world with their hearts in their throats as Crane, who was at the board, increased the retarding force sufficiently to assure himself that they would not be traveling too fast to land upon the Earth.

After Dorothy and Margaret had gone to prepare a meal, DuQuesne turned to Seaton.

"Have you gentlemen decided what you intend to do with me?"

"No. We haven't discussed it yet. I can't make up my own mind what I want to do to you, except that I sure would like to get you inside a square ring with four-ounce gloves on. You have been of too much real assistance on this trip for us to see you hanged, as you deserve. On the other hand, you are altogether too much of a thorough-going scoundrel for us to let you go free. You see the fix we are in. What would you suggest?"

"Nothing," replied DuQuesne calmly. "As I am in no danger whatever of hanging, nothing you can say on that score affects me in the least. As for freeing me, you may do as you please—it makes no difference to me, one way or the other, as no jail can hold me for a day. I can say, however, that while I have made a fortune on this trip, so that I do not have to associate further with Steel unless it is to my interest to do so, I may nevertheless find it desirable at some future time to establish a monopoly of X. That would, of course, necessitate the death of yourself and Crane. In that event, or in case any other difference should arise between us, this whole affair will be as though it had never existed. It will have no weight either way, whether or not you try to hang me."

"Go as far as you like," Seaton answered cheerfully. "If we're not a match for you and your gang, on foot or in the air, in body or in mind, we'll deserve whatever we get. We can outrun you, outjump you, throw you down, or lick you; we can run faster, hit harder, dive

deeper, and come up dryer, than you can. We'll play any game you want to deal, whenever you want to deal it; for fun, money, chalk, or marbles."

His brow darkened in anger as a thought struck him, and the steady gray eyes bored into the unflinching black ones as he continued, with no trace of his former levity in his voice:

"But listen to this. Anything goes as far as Martin and I personally are concerned. But I want you to know that I could be arrested for what I think of you as a man; and if any of your little schemes touch Dottie or Peggy in any way, shape or form, I'll kill you as I would a snake—or rather, I'll take you apart as I would any other piece of scientific apparatus. This isn't a threat, it's a promise. Get me?"

"Perfectly. Good-night."

For many hours the Earth had been obscured by clouds, so that the pilot had only a general idea of what part of the world was beneath them, but as they dropped rapidly downward into the twilight zone, the clouds parted and they saw that they were directly over the Panama Canal. Seaton allowed the Skylark to fall to within ten miles of the ground, when he stopped so that Martin could get his bearings and calculate the course to Washington, which would be in total darkness before their arrival.

DuQuesne had retired, cold and reticent as usual. Glancing quickly about his cabin to make sure that he had overlooked nothing he could take with him, he opened a locker, exposing to view four suits which he had made in his spare time, each adapted to a particular method of escape from the Skylark. The one he selected was of heavy canvas, braced with steel netting, equipped with helmet and air-tanks, and attached to a strong, heavy parachute. He put it on, tested all its parts, and made his way unobserved to one of the doors in the lower part of the vessel. Thus, when the chance for escape came, he was ready for it. As the Skylark paused over the Isthmus, his lips parted in a sardonic smile. He opened the door and stepped out into the air, closing the door behind him as he fell. The neutral color of the parachute was lost in the gathering twilight a few seconds after he left the vessel.

The course laid, Seaton turned almost due north and the Skylark tore through the air. After a short time, when half the ground had been covered, Seaton spoke suddenly.

"Forgot about DuQuesne, Mart. We'd better iron him, hadn't we? Then we'll decide whether we want to keep him or turn him loose."

"I will go fetch him," replied Crane, and turned to the stairs.

He returned shortly, with the news of the flight of the captive.

"Hm ... he must have made himself a parachute. I didn't think even he would tackle a sixty-thousand-foot drop. I'll tell the world that he sure has established a record. I can't say I'm sorry that he got away, though. We can get him again any time we want him, anyway, as that little object-compass in my drawer is still looking right at him," said Seaton.

"I think he earned his liberty," declared Dorothy, stoutly, and Margaret added:

"He deserves to be shot, but I'm glad he's gone. He gives me the shivers."

At the end of the calculated time they saw the lights of a large city beneath them, and Crane's fingers clenched upon Seaton's arm as he pointed downward. There were the landing-lights of Crane Field, seven peculiarly-arranged searchlights throwing their mighty beams upward into the night.

"Nine weeks, Dick," he said, unsteadily, "and Shiro would have kept them burning nine years if necessary."

The Skylark dropped easily to the ground in front of the testing shed and the wanderers leaped out, to be greeted by the half-hysterical Jap. Shiro's ready vocabulary of peculiar but sonorous words failed him completely, and he bent himself double in a bow, his yellow face wreathed in the widest possible smile. Crane, one arm around his wife, seized Shiro's hand and wrung it in silence. Seaton swept Dorothy off her feet, pressing her slender form against his powerful

body. Her arms tightened about his neck as they kissed each other fervently and he whispered in her ear:

"Sweetheart wife, isn't it great to be back on our good old Earth again?"

THE END

Transcriber's Notes & Errata

The original page numbers from the magazine have been retained.

A Table of Contents has been added.

Some chapter headings have a period at the end, while others did not. No changes have been made in the transcription.

Illustrations have been moved to the appropriate place in the text.

The following typographical errors have been corrected.

Page	Error	Correction
393	plantinum	platinum
395	refused.	refused."
395	We	"We
395	abstruce	abstruse
397	I love	"I love
400	CHAPTE	CHAPTER
401	food	fool
407	unmistakeable	unmistakable
411	ever	even
413	Mat	Mart
534	gravity.	gravity."
536	completely.	completely."
544	ecstacy	ecstasy
546	embarassment	embarrassment
556	Naloon	Nalboon
558	inumerable	innumerable
559	but	"but

615	efficient	efficient."
616	Dare	"Dare
616	wit	wait
633	They produce	"They produce

A number of words have been variably hyphenated in the text. They are given in the following table.

The number of times each form occurred is given in parentheses.

blue-prints (2)	blueprints (4)
border-line (3)	borderline (1)
break-down (1)	breakdown (1)
devil-fish (1)	devilfish (1)
Good-bye (4)	Goodbye (1)
good-bye (4)	goodbye (3)
good-night (2)	goodnight (2)
half-way (4)	halfway (1)
hand-rail (1)	handrail (2)
hand-rails (1)	handrails (1)
home-coming (1)	homecoming (1)
major-domo (3)	majordomo (1)
near-by (1)	nearby (4)
nitro-glycerin (2)	nitroglycerin (2)
to-night (2)	tonight (7)

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