

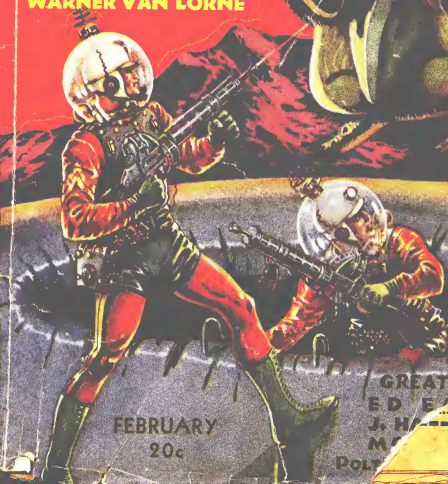
VALLEY OF LOST SOULS *by* **EANDO BINDER**

SEE
BACK
COVER

AMAZING STORIES

**WANTED:
7 FEARLESS!
ENGINEERS!**

by
WARNER VAN LORNE



FEBRUARY
20c

GREAT STORIES AGE.....
ED BY.....
J. H..... STATE.....
M.....
DOL.....



From heated room—to icy street
WATCH YOUR THROAT...look out for a COLD!

—gargle with Listerine

THE prompt use of Listerine Antiseptic after exposure to sudden temperature changes, drafts, wet or cold feet, may often head off a cold or simple sore throat. At such times, this wonderful antiseptic seems to give Nature the helping hand it needs in fighting germs.

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First Listerine Antiseptic cleanses the entire oral cavity, then reaches far down into the throat and kills millions of germs associated with colds and simple sore throat . . . the "secondary invaders" as doctors call them. They are the bacteria that accelerate congestion and inflammation.

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Such germ reduction helps you to understand the

remarkable success Listerine Antiseptic has had in controlling colds.

Controlling Colds

Seven years of medically supervised research proved that those who gargled regularly with Listerine Antiseptic had fewer colds, milder colds, and got rid of their colds faster than non-garglers.

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LISTERINE

THE SAFE ANTISEPTIC



Listen for the Train Whistle . . . GRAND CENTRAL STATION
Network . . . Every Friday Evening . . . See your newspaper for time



J. E. SMITH, Pres., National Radio Institute
Established 1914

The man who has directed the home study training of more men for the Radio Industry than any other man in America.



Set Servicing

Spare time set servicing pays more than \$5, \$10, \$15 a week extra while learning. Full time servicing pays as much as \$35, \$50, \$75 a week.

Broadcasting Station

Employ managers, engineers, operators, installers and maintenance men for broadcasting jobs and pay up to \$1,000 a year.



Load Speaker Systems

Building, installing, servicing and operating public address systems is another growing field for men well trained in Radio.



HERE'S PROOF THAT MY TRAINING PAYS

\$50 Monthly in Spare Time

"I work on Radio part time, still holding my regular job. Since enrolling seven years ago, I have averaged around \$50 every month." JOHN H. MORRISSETTE, 616 Valley St., Macomb, N. H.

Make \$20 to \$40 a Week

"I am making between \$20 and \$40 a week after all expenses are paid, and I am getting all the Radio work I can take care of. Thanks to N.R.I." H. W. SPANGLER, 124 1/2 E. Gay St., Knoxville, Tenn.



Operates Public Address System

"I have a position with the Los Angeles City Service, operating the Public Address System in the City Hall Council. My salary is \$175 a month." A. M. EGOD, R. 134, City Hall, Los Angeles, Calif.



Learn at Home to Make More Money

I will train you at home for many Good Spare Time and Full Time Radio Jobs

Don't give up your ambition to get a better job—more pay. Even if you can't spare the money or time from your job to go away to school—there is a convenient way open to you. I will train you at home in your spare time for good pay when full time jobs in Radio—jobs alongside many men you now consider more fortunate than yourself. You don't need to know a thing about Radio or electricity, either, to become a Radio Expert.

Get Ready Now for Jobs Like These
Radio broadcasting stations employ engineers, operators, station managers and pay up to \$1,000 a year. Fixing Radio sets in your time pays many \$200 to \$500 a year—full time jobs with Radio Jobbers, manufacturers and dealers as much as \$30, \$50, \$75 a week. Many Radio Experts open full or part time Radio sales and repair businesses. Radio manufacturers and jobbers employ salesmen, inspectors, foremen, engineers, technicians, and pay up to \$1,000 a year. Automobile, police, aviation, commercial Radio, head repair systems are newer Radio offering good opportunities now and for the future. Television practice is open many good jobs soon. Men I trained Radio good jobs in these branches of Radio. Read how they got their job. Mail coupon.

Why Many Radio Experts Make \$35, \$50, \$75 a Week

Radio is young—but it's one of our large industries. More than 23,000,000 homes have one or more Radios. There are more Radios than telephones. Every year millions of Radios get out of date and are replaced. Millions more need new tubes, repairs. Over \$30,000,000 are spent every year for Radio repairs alone. Over 5,000,000 sets Radios are in use; more are being sold every day offering more profit making opportunities for Radio experts. And RADIO IS STILL GROWING, expanding into new fields. The few hundred \$30, \$40, \$75 a week jobs of 20 years ago have grown to thousands. Yes, Radio offers opportunities now and for the future.

Many Make \$5, \$10, \$15 a Week Extra in Spare Time While Learning

The day you enroll, in addition to our regular course, I start sending Radio Repair Kits, show you how to do Radio Repair jobs. Throughout your training I send plans and directions that make good spare time money—\$20 to \$50 for hundreds, while learning.

How You Get Practical Experience While Learning

I send you special Radio equipment; show you how to connect experiments, build circuits illustrating important principles used in modern Radio receivers, broadcast stations and high-power installations. This 50-50 method of training—with practical instruction and working with Radio parts and electronic—makes learning at home interesting, fascinating, practical. I ALSO GIVE YOU A WORKING PROFESSIONAL ALL-WAVE, ALL-PURPOSE RADIO SET SERVISING INSTRUMENT to help you make good money fixing Radios while learning and equip you with a professional instrument for full time jobs after graduation.

Money Back Agreement Protects You

I am so sure I can train you to your satisfaction that I agree in writing to refund every penny you pay me if you are not satisfied with my Lessons and Instruction Service when you finish. A copy of this agreement comes with my Free Book.

Find Out What Radio Offers You

Act Today. Mail the coupon now for "Rich Rewards in Radio." It's free to any fellow over 18 years old. It points out Radio's great time and job opportunities and shows you how to get them. It tells about my training in Radio and Television; shows you letters from men I trained, telling what they are doing and earning. Find out what Radio offers YOU! MAIL COUPON in a envelope, or paste on a postcard—NOW!

J. E. SMITH, President, Dept. SAM
National Radio Institute
Washington, D. C.



This Coupon is Good for One FREE Copy of My Book

J. E. SMITH, President, Dept. SAM
National Radio Institute, Washington, D. C.

Dear Mr. Smith: Without obligating me, send "Rich Rewards in Radio," which points out the spare time and full time opportunities in Radio and explains your 50-50 method of training men at home in spare time to become Radio Experts. (Please Write Plain.)

NAME..... AGE.....

ADDRESS.....

CITY..... STATE.....

What will you be doing - ONE YEAR FROM TODAY



* Three hundred and sixty-five days from now — where will you be?

Still be struggling along in the same old job at the same old salary — worried about the future — never able to make both ends meet? Will you still be putting off your start to success—fiddling away precious hours that will never come again?

Don't do it, man—don't do it! There's no greater tragedy than that of the man who stays sunk in a rut all his life, when with just a little effort he could advance.

Think of the thousands of successful, prosperous men in every industry and business who owe much of their success to International Correspondence Schools training (you'd recognize hundreds of their names). They refused to be licked by lack of training! They found that the I.C.S. offered them comprehensive yet simplified texts prepared by outstanding authorities, plus personal guidance and expert, understanding instruction.

The coupon will bring you the full story of the I.C.S., and what it can mean to you.

INTERNATIONAL CORRESPONDENCE SCHOOLS

BOX 2115-G, SCRANTON, PENNA.

★ Without cost or obligation, please send me a copy of your booklet, "Who Wins and Why," and full particulars about the subject before which I have marked X: ★

TECHNICAL AND INDUSTRIAL COURSES

- | | | | |
|--|--|---|--|
| <input type="checkbox"/> Architect | <input type="checkbox"/> Sheet Metal Worker | <input type="checkbox"/> Commercial Refrigeration | <input type="checkbox"/> Surveying and Mapping |
| <input type="checkbox"/> Architectural Draftsman | <input type="checkbox"/> Refrigerator | <input type="checkbox"/> Plumbing <input type="checkbox"/> Steam Fitting | <input type="checkbox"/> Bridge Engineering |
| <input type="checkbox"/> Building Estimating | <input type="checkbox"/> Telegraph Engineer | <input type="checkbox"/> Heating <input type="checkbox"/> Ventilation | <input type="checkbox"/> Bridges and Building Foreman |
| <input type="checkbox"/> Costmaster and Builder | <input type="checkbox"/> Telephone Work <input type="checkbox"/> Radio | <input type="checkbox"/> Air Conditioning and Cooling | <input type="checkbox"/> Chemistry <input type="checkbox"/> Pharmacist |
| <input type="checkbox"/> Structural Draftsman | <input type="checkbox"/> Mechanical Engineering | <input type="checkbox"/> Steam Engineer | <input type="checkbox"/> Coal Mining |
| <input type="checkbox"/> Structural Engineer | <input type="checkbox"/> Mechanical Draftsman | <input type="checkbox"/> Steam Electric Engineer | <input type="checkbox"/> Mine Foreman <input type="checkbox"/> Fire Boss |
| <input type="checkbox"/> Management of Inventories | <input type="checkbox"/> Machinist <input type="checkbox"/> Welder | <input type="checkbox"/> Marine Engineer | <input type="checkbox"/> Navigation |
| <input type="checkbox"/> Electrical Engineer | <input type="checkbox"/> Patternmaker | <input type="checkbox"/> S. B. Locomotive | <input type="checkbox"/> Cotton Manufacturing |
| <input type="checkbox"/> Electric Lighting | <input type="checkbox"/> Diesel Engines | <input type="checkbox"/> R. B. Electric Foreman | <input type="checkbox"/> Woollen Manufacturing |
| <input type="checkbox"/> Welding, Electric and Gas | <input type="checkbox"/> Artillery Engineer | <input type="checkbox"/> Air Engines <input type="checkbox"/> R. K. Signalman | <input type="checkbox"/> Agriculture |
| <input type="checkbox"/> Heating, Steam, Hot Water | <input type="checkbox"/> Auto Technician | <input type="checkbox"/> Railway Engineering | <input type="checkbox"/> Brick Growing |
| <input type="checkbox"/> Heat Treatment of Metals | <input type="checkbox"/> Auto Electrical Technician | <input type="checkbox"/> Civil Engineering | <input type="checkbox"/> Pottery Farning |

BUSINESS TRAINING COURSES

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|---|--|--|--|
| <input type="checkbox"/> Business Management | <input type="checkbox"/> Bookkeeping | <input type="checkbox"/> Selling Station Salesmanship | <input type="checkbox"/> Grade School Subjects |
| <input type="checkbox"/> Technical Management | <input type="checkbox"/> Commercial Work | <input type="checkbox"/> Post Year College Subjects | <input type="checkbox"/> High School Subjects |
| <input type="checkbox"/> Traffic Management | <input type="checkbox"/> Spanish | <input type="checkbox"/> Business Correspondence | <input type="checkbox"/> College Preparatory |
| <input type="checkbox"/> Accounting | <input type="checkbox"/> French | <input type="checkbox"/> Stenography and Typing | <input type="checkbox"/> Literature |
| <input type="checkbox"/> Cost Accountant | <input type="checkbox"/> Salesmanship | <input type="checkbox"/> Civil Service <input type="checkbox"/> Mail Carrier | <input type="checkbox"/> Cartography |
| <input type="checkbox"/> C. F. Accountant | <input type="checkbox"/> Advertising | <input type="checkbox"/> Railway Mail Clerk | <input type="checkbox"/> Lettering Show Cards <input type="checkbox"/> Signs |

DOMESTIC SCIENCE COURSES

- | | | |
|---|---|--|
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| <input type="checkbox"/> Professional Dressmaking and Designing | | <input type="checkbox"/> Tea Room and Cafeteria Management, Catering |

Name Age Address

City State Present Position
 If we reside in Canada, send this coupon to the International Correspondence Schools, Limited, Montreal, Canada.
 If you reside in England, send coupon to I. C. S., 72 Kingsway, London, W. C. 2, England.

**FEBRUARY
1939**

**VOLUME 13
NUMBER 2**

AMAZING STORIES

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Cover painting by Robert Fuqua, depicting a scene in *Wanted: 7 Fearless Engineers*
Illustrations by Robert Fuqua and Julian S. Krupa

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AMAZING
STORIES
February 1939

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Volume XXII
Number 2

Mr. Mattingly & Mr. Moore spin a tale of finer whiskey!

"Oh, Mr. Mattingly,
Oh, Mr. Mattingly,
How can we retain our
native modesty..."



"When folks holler from the
tree-tops:
'M & M is really THE tops
For its mellow flavor
and its quality!'"



"Yes, Mr. Moore,
Yes, Mr. Moore,
These ovations make me blush
till I turn pink..."



"And the reason,—er—ahem—is
That our whiskey, M & M, is
Slow-distilled for glorious goodness,
yet priced lower than you'd think!"



There are lots of reasons why
YOU should start enjoying this
fine, mellow, slow-distilled whis-
key, at once!

One reason—M & M is ALL
whiskey, every drop in every bot-
tle! Another reason—it is a blend
of straight whiskeys...the kind of

whiskey we believe is tops!

There are more reasons—but
have the pleasure of discovering
them for yourself! Ask for M & M,
at your favorite bar or package
store, today. And, here's one more
reason you should try M & M—the
price is amazingly LOW!

Mattingly & Moore

Long on Quality—Short on Price!

*A blend of straight whiskeys—100% straight whiskeys—90 proof.
Frankfort Distillers, Incorporated, Louisville and Baltimore.*



The OBSERVATORY

by THE Editor

FEW of us stop to think of the importance of engineers in our civilization. These mechanical minded men who tend the complex machines of our science, and make possible the continual use of all the comforts and conveniences of today. But what would happen if our engineers forgot how to tend their machines?

Warner Van Lorne asked himself that question when he wrote "Wanted: 7 Fearless Engineers!" and pictured a civilization which had forgotten. How seven American engineers saved that civilization and restored the mighty machines to working order makes one of the most engrossing and convincing science fiction stories your editors have ever read.

In addition, he wrote a story which has an exceptional element of mystery. You'll become absorbed in the problem as it unfolds. Where could this mighty civilization be? First the trail leads out to sea, then south into unknown waters to . . . but read for yourself. . . .

ANOTHER story in this issue which is of intense interest to modern-day readers is J. Harvey Haggard's amazingly prophetic story, "The Light That Kills." In view of the world events of recent months, it seems logical that sometime in the near future, a nation will be faced with the problem of the tiny, fictitious country being attacked suddenly by a larger and more powerful neighbor.

Certainly, in such an event, we could expect the results to be as pictured, and perhaps, as author Haggard imagines, it may be the signal for the release of a phenomenal new scientific discovery which will revolutionize warfare, and turn the tide in favor of the small nation. A new scientific weapon which will more than even the odds in favor of a powerful and warlike nation, armed to the teeth with all the resources of modern destruction.

Haggard has pictured the Four Horsemen of the Apocalypse riding again, but leading them is a new and more terrifying rider, astride a strong steed whose stride is more arrogant than any of the other four. The name of this new horseman is Science.

The scientific background of this story is the most logical we have yet presented, and certainly sound enough to become fact. Perhaps AMAS-

ING STORIES will once more prove itself prophetic in presenting the actual future. When you read this story, it may tuck itself away in your memory to be brought out by headlines in the newspapers of a not so distant day.

Your editors only wonder how soon?

THE recent panic in America, caused by the now historic broadcast of H. G. Wells' Martian invasion story as a Halloween thriller, is truly amazing. Science fiction has indeed become a potent force in our everyday life when a bit of fiction can be accepted instantaneously by thousands as absolute fact. Not so many years ago, most people would not have comprehended the significance of interplanetary invasion. Incredulity would have created an apathy impossible to disturb.

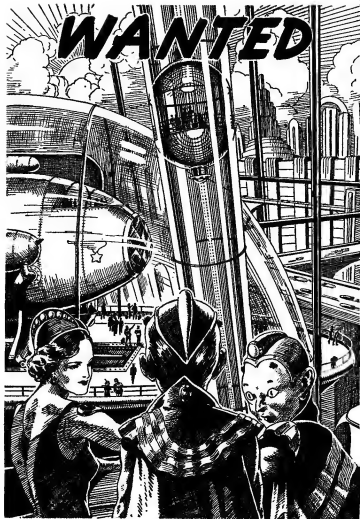
But today, people take it for granted as perfectly possible and logical, and even evacuate the scene in a frantic attempt to escape from "Martian monsters" and "heat rays." They believed because science fiction has become a part of their daily lives, and has become an accepted standard of the future and its possibilities. They accepted the reality of the danger because they believe in the possibility of invaders from other planets. No longer is man earth-bound, except in body. His mind has already recognized other worlds in addition to his own. Who now can say that America is not science fiction conscious?

AUTHOR ROBERT BLOCH comes through with a definition for matter: "Matter is that which forms the difference between a pink elephant and a real one." Which completes the trilogy of Blochian definitions.

OUR back cover this month depicts Julian S. Krupa's conception of the ocean liner of the future. The editors don't think this conception very far-future either. Such ships seem to us to be a positive certainty in the very near future. Streamlining has already made its presence felt in shipping circles, and at any time now we can expect some enterprising shipbuilder to build Krupa's new "Queen of the Seas."

(Concluded on page 135)

WANTED



A magnificent city lay before them



7 FEARLESS ENGINEERS!

By **WARNER VAN LORNE**

A great civilization's fate lay in Dick Barrow's hands as he led his fellow engineers courageously to an unknown land

CHAPTER I

Opportunity

FROM where Dick Barrow sat, hundreds of men were visible, occupying benches in every manner of position. Some stretched at full length, sleeping in the morning sun after a night in the park. Others sat with heads hanging; thinking thoughts of their own.

Depression or recession, it meant the same to all of them. Some didn't care, but others tried to find any kind of work that would fill their stomachs with food.

For three days Dick hadn't eaten a good meal, and felt almost as low as the derelicts whom he had for companions. He would have enjoyed a smoke, but turned away as two men dove for a cigarette-butt; discarded by a passer-by.

Anyone who could afford to buy a newspaper was an aristocrat, and Dick watched until he saw one discarded. For three days he had been reading them secondhand, but the only jobs were too far to walk and apply for.

His eyes stopped at one item in the column and a puzzled frown slowly puckered his forehead.

Robert Fugate

Wanted: An Engineer. Young man with love for electrical and mechanical work, who is not afraid of isolation. Have some knowledge of engineering, but general experience more desirable than specialized training. Must be willing to leave country, never to return; for which he will be well remunerated. Have no close family ties, and willing to submit to certain amount of danger. Will be isolated with few members of own race, but will have great opportunity to develop mastery of huge machines. Come prepared to leave for post immediately, without preparation. Every want will be taken care of by employers. This position is for lifetime, without opportunity of turning back after having accepted responsibility. GREAT OPPORTUNITY! Room 36, 18 W. Morgan Ave., City.

For a long time Dick Barrow gazed at the ad, mentally comparing his own qualifications for the position—and they seemed to fit! He was not a graduate engineer, being forced to quit school after two years of study. Three years later his father died, then Dick lost the job that had kept them eating regularly. His love of mechanics remained insatiable, and he constantly hoped for work which would allow him to use his knowledge and ability.

He had no relations, and the *only* girl had forgotten him, when he left school. He heard that she married a classmate!

Dick was twenty-seven. Five years had slipped by since he quit school, and he couldn't remember where they had gone. It was only six months after his father died that he lost his last regular job. He tried selling and was a failure. He had been carpenter's helper, plumber's helper, porter, counter-man and busboy as the months passed, but nothing steady. For the past two months he had been hunting for work, while his few dollars dwindled to where he no

longer had room rent. Then it was the park.

His feet were sore and blistered from holes in his shoes, and he limped with every step. It took so long to reach the address that there was little chance of finding the job still open. It was not the first time he had missed—for the same reason.

HE found that 18 Morgan Avenue was a dreary structure, appearing as if it had been standing twenty years too long. The wooden stairs creaked as he rested his weight on first one sore foot and then the other. Room 36 was at the top of the five story building, and it seemed ages before he reached the doorway. The only sign of furnishing in the room was a hard bench, occupied by three men. Dick had to stand while his feet tortured him, but it was hopeful to see men waiting—*the job wasn't filled!*

Suddenly a door at the opposite side of the room jerked open and a man dashed through.

"Get out of here! The man's insane!"

Two of the men followed, but the man who remained on the bench glanced at Dick, grinned, shrugged his shoulders and entered the door. A moment later his booming voice could be heard through the thin partition, although his words were not clear.

An hour passed while Dick waited. When the man came out, with a smile on his face, he wished Dick luck and headed for the stairway.

Barrow felt a queer sensation as he stepped through the inner doorway. A man faced him in a huge leather chair across the room. At least Dick thought he was a man. Grotesque in every way, his body was small while his head was twice as large as normal. He was light complexioned, with almost white hair

thinly covering the top of his enormous head. His features were finely cut, with large aquiline nose. He was not repulsive, and smiled in welcome as Dick hesitated at the threshold. When he spoke his tone was soft and musical.

"Welcome, stranger. You have come in answer to my advertisement and I will explain without wasting time. But first tell me about yourself."

Going over his complete life history, including the two years in college, Dick came to the lean years when his father died. He hesitated slightly not proud of this period.

"Go on, Mr. Barrow. It is not important to have been a success in business, and I will not consider that in your qualifications. It isn't what you *have* done, but what you *want* to do, that interests me."

He spoke with a strange accent, that Dick didn't recognize. But he was pleasant and made it easy to talk.

When Barrow finished, by relating the finding of the newspaper and the long walk to the office, the queer man was smiling.

"I like your frankness and will tell you about the position, although I can't reveal the location of your work. It is not on any map, and you will work among a race such as myself, with no opportunity of leaving after reaching the destination.

"You will be given every comfort and advantage among my people, and be required to work hard in return. There are several machines out of commission which must be repaired and put to work again. After a few months your work will be easier, although you must constantly watch all machinery to see that it is in perfect condition, and does not stop work for even a moment.

"My people use mechanics of greater size and development than anything you have ever seen, and our lives de-

pend on its perfect operation. In order to accept this position you must be married. Your wife must come with you, and be willing to accept the same living conditions which are offered to you.

"The man who left this office as you entered has a fiancée and has gone to talk it over with her. In your instance *I must select your wife!* You will be the leader of the workmen whom I take back. There will be only a few people such as yourself, and you can never again see others of your race.

"You will have power and wealth among my people, and every type of entertainment that you desire. But remember that you leave your race forever, with *no possibility* of return! If you accept my offer you must trust entirely in what I say about the future."

When the man finished speaking Dick was quiet for a long time. Everything seemed so unreal, so different from what he had expected. He must be willing to leave everything that he had always known—to enter an existence which he didn't understand—without chance of return! Yet he believed every word this man spoke, impossible as it seemed. But *marriage . . .* with a girl he had never *seen!*

The man spoke again. "You hesitate about marrying; I can see it in your eyes. But remember that *she* must accept without knowing you, and is taking just as great a chance. This I can say. She will be brilliant, and I *could not* trust you to pick out a brilliant woman for your wife. Love would come first in your eyes. Other things would seem unimportant. I know that you and the girl I select are apt to fall in love, as I shall choose a girl suitable to your temperament."

Dick answered slowly, "I don't know what to say. I will have to live with her all of my life, and if we are *not*

happy anything you could offer would mean nothing."

The smile spread over the strange man's face again. "I wouldn't worry too much. I believe you stand a greater chance of happiness if I do the choosing than if you do it yourself as I can see more of the future. If you are mutually likable and willing to understand each other; if you are mentally on the same level, there is little chance of *not* falling in love. My race mates in this way, and it works much better than your haphazard mating."

When he realized that Dick still hesitated, he was slightly upset. Then reaching into a leather bag, hung from a strap around his neck, he stretched forth a handful of bills.

"Go and get yourself a good meal. It is now morning. When two more mornings have passed come again. Don't be afraid to use the money for anything that you desire. This does not mean that I expect you to accept the offer, but it will allow you to think it over carefully—without thinking of your *stomach*. Buy clothes, a room to sleep in, anything else that you want. Be comfortable and do not worry about what you spend. If you refuse my terms, I will be disappointed, but will not expect to be repaid."

AS Dick reached the street he shook his head. It all seemed so fantastic. But the money in his hand was real money—and there was a lot of it! Suddenly he realized that people were staring at the handful of bills, and he hurriedly stuffed them in a pocket. When he was alone for a moment he stepped into a vacant doorway to count it.

There were 14 twenties, 10 fifties, and three ten dollar bills in the lot. Twenty-seven bills in all, representing eight hundred and ten dollars. Folding the

money carefully and placing it in a safe pocket, he noticed a sign across the street. "SHOES," it said. He glanced at his own, then limped slowly across when the traffic lights changed. For a moment he looked in the window, then stepped inside.

While the shoe clerk was busy he carefully slipped a twenty from the other bills. It would seem strange if he had too much money with his feet in such shape.

The next stop was a restaurant. Then followed a trip to a clothing store—and he left his old suit behind. With new clothes, shoes, and a meal beneath his belt, he began to think the offer of the stranger was far from fantastic. What if he did have to marry a strange girl? At least they would both have comfort and companionship, wherever they went.

Barrow's first appointment was on Tuesday morning, and Friday found him climbing the same stairs. He watched the papers but there had been no repetition of the advertisement. Evidently the strange man had all the applicants he wanted.

The outer office was empty, but when he opened the inner door, the queer man was smiling just as Dick remembered him.

"Come in, Mr. Barrow. I'm glad to see you. I was surprised to hear of your use of the money, but was pleased rather than disappointed. You did well."

For a moment Dick was taken back, then he smiled sheepishly. "I don't know just what to say, Sir, I did so many things. But I didn't know I was being watched."

"Every move you made was watched carefully, and reported to me. I know where you spent every hour since you left here the other morning. I wanted to know how you would act with money

enough to do as you pleased for a few days. You acted wisely, and I'm glad that you spent so much of it on men who need it. You bought twenty-two pairs of shoes, thirty-six shirts and forty-five suits of underwear. You also bought cheap suits for nine men and several odd and end accessories as well.

"Out of the total sum you spent less than one hundred dollars for yourself, and yet you have only forty-two dollars of the sum that I handed you. The remainder you used for meals and cheap lodging for the men you have taken care of in the past three days. You have gone through a lot of money since you were here."

Dick stammered as he spoke, "I'm sorry, sir, but I thought—"

"You thought *just right!* I *did* give you the money to use as you pleased and I'm proud of the way you spent it. But I want to know the answer. You must have decided by this time. If the answer is yes, you will bind yourself to a life time of work. If it is no, we will say goodbye."

Dick's face lighted with a smile. "The answer is yes. I am proud to leave my future in your hands—even to my marriage. I made up my mind to do as you desire, and am prepared to leave any time you are ready. I hope you have hired every one you need and that we will all enjoy our new work."

"You're a brave man, Dick Barrow." There was admiration in the voice of the stranger. "If you remained here I believe you would make your mark in life, but you will have even greater opportunity where you are going. I believe your decision will prove to be a happy one."

"You must stay at a good hotel. Reasonable if you want, although it is not important. I will send the girl to you within a few days. You will be married as soon as possible after you

meet her.

"She will bring a letter and will do exactly as you say. I will allow time for you to get acquainted before I have further orders. From that time you will obey my orders explicitly and follow every instruction without question. Every member of the party will take orders from you, and *you must give them!*"

Once more Dick was handed a handful of bills as he prepared to leave, and knew there was even more than the first time. But he would live in constant dread of meeting the girl he was to marry. As he started to open the door, the man spoke again.

"Use the money as you desire. It will be your last chance of spending any and I want you to enjoy yourself as much as possible during the time remaining. Do what you like for the men in the park or any others you wish to help. If you need more money send a messenger to this room, but don't come yourself. Don't contact me again until my orders require it. Have a good time."

Dick felt that he was living a dream, but a very pleasant one. Just one thought disturbed him. Who the girl would be—and what she would be like?

CHAPTER II

Out to Sea

THE following morning an advertisement appeared in the papers, under the heading of help wanted: women. It was the same address on Morgan avenue. His heart sank! The man was *advertising* for a wife! Now Barrow *knew* he was in for a tough streak of luck. He read it carefully.

Opportunity for young lady. Must be of age, single, brilliant, with good family background. Higher education not necessary. Must be willing to travel

long distance. Must not be averse to marriage with brilliant young man; give up all former associations, with no possibility of return; live life in small community of own race, with no possibility of communication with former home. Must be without close family ties, or relationship. Opportunity to live life of luxury and ease, with amiable group far from present home and civilization. Young lady who fits qualifications will not regret applying for position. Honor, love and security will be her reward. OPPORTUNITY! Room 36, 18 West Morgan Avenue, City.

While Dick was eating dinner on Tuesday evening, a young lady fell headlong in front of his table. A moment later she was seated in the chair opposite his own. Ten minutes later he was ordering her dinner.

Afterward, as they walked toward a movie, Dick felt as if he was committing a crime. He was supposed to meet his future wife—and instead was entertaining this young lady who had fallen into his life. When he learned that she was staying at the same hotel, they made a date for breakfast the next morning.

Dolores Dunbar was good company, and seemed willing to spend most of her time in Dick's company. He learned that she was as friendless as himself, and wondered why they couldn't have met before he made the strange bargain. But as the third day drew to a close she appeared apprehensive.

When she kept glancing around, as if expecting someone, Dick became curious, and felt rather hurt to think she was looking for someone else. Finally she spoke.

"I'm sorry, Dick, that I've made use of you the way I have, but I was ordered to do it. You see, my employer told me to meet you and spend every possible moment in your company. He

also said that I would become acquainted with someone through you, and that you would know who he was, when I said I came from a large headed man on Morgan Avenue—with a letter."

For a moment Dick was stunned. Then he laughed, a sickly, half-hearted laugh. When he found his voice it squeaked.

"I think we had better go to my room. We have some very private things to say."

The queer man had succeeded in their being together for three days before either knew *they* were the central figures in the drama. Now they felt farther apart than at any moment since they had met, but nervously admitted they had fared better than they expected.

THEY were married in the morning, to keep the agreement, but didn't consider it part of the bargain to live as man and wife.

Dick found only one order in the letter, to be at the office at ten o'clock on Tuesday morning. That left five days to enjoy themselves.

In spite of the stiffness between them Dick noticed how the light caught in Dolores' dark hair, and how her brown eyes sparkled at each new sight. Her head reached just above his shoulder, and he had never danced with a better partner. She enjoyed his company, and admitted to herself that he was a perfect gentleman.

During the five days they saw every good show, and visited every popular night club. Things they had always wanted to do were packed into the short time to themselves. Dick hired a car, and they drove for hours through the country. When Tuesday morning came they were tired, and it was hard to get up in time to keep the appointment.

When they opened the door, the big-headed man laughed at their yawns. "I see that you've either *been* enjoying yourselves, or have been *trying* mighty hard. You can make up your sleep from now on, as it will be a long time before we reach our destination. How do you like each other for permanent companions?"

Their faces grew crimson. Finally, Dick found his voice. "I'm perfectly satisfied, Sir. I think Dolores is very pretty, and is very good company!"

He looked the other way to hide his embarrassment, as the girl spoke.

"I feel the same way. We have enjoyed being together, and perhaps when we are better acquainted the stiffness will disappear. We both feel odd, because we were required to marry!"

The strange man laughed out loud at this. "In other words you *might* have fallen in love, if you had been allowed time to do it. But *having* to marry creates an entirely different feeling. I believe it will work out well, even though you feel cheated at the moment. But we haven't any time to lose. Everyone is at the dock and we sail in two hours.

"Here are your instructions, Dick. From now on *you* give the orders, and I remain in the background. They will all feel more comfortable under the command of one of their own race. Study everything carefully on the way to the dock, then give them as your own orders."

Dick had little time for anything except to look through the sheaf of papers. On one sheet was a list of seven couples, with stateroom numbers beside each. His own was on the top, with number three room. This he dropped in a side pocket where it would be easy to find. The remainder was in connection with sailing.

Dick, Dolores and the big headed

man occupied one cab, while the baggage followed in another. Dolores had obtained quite a wardrobe, much to the amusement to their employer. But the man spoke only once during the trip.

"Everyone in the party must consider that they work for you, Dick. You must hear all complaints and settle all differences. They must not approach me for any reason. I am known as Morquill, of section one, which you will understand when we reach our destination."

The crew was hurrying back and forth on the deck of the small ship, taking care of last-minute details. A group of people were gathered beside a huge stack of baggage, and Dick walked toward them without waiting for the others.

Dolores went up the gangplank beside Morquill, helping him slightly. He seemed to have difficulty in supporting his enormous head with the slight body.

As Dick reached the group, he read the names from the list in his hand. "Mr. and Mrs. John McCarthy. You are in stateroom number seven. Take what baggage you can carry, the rest will be put on board." He called each name and stateroom; they headed for the ship. John McCarthy he found was the man he had met in the office, and he *still* had his perpetual grin. Evidently his fiancée had agreed to the pact for they were now man and wife.

When Dick started toward the ship, after watching the baggage put on board, he was stopped by a tap on the shoulder. The cab drivers were still waiting for their money. Morquill had left everything in his hands, even to paying for the trip to the dock.

It was a strange departure, with only a few people on the dock to say good-bye. Even they were just neighbors of the passengers. Most of the women on board were crying as the "Primrose"

nosed out through the harbor toward the open sea.

DICK was still at the rail when the captain approached. "I'm sorry to bother you, Mr. Barrow, but I must know our destination so I can set the course."

The young leader's day dreaming was cut short, to jerk him back to his duties. He felt that the lives and hopes of everyone on the ship had been thrust into his hands.

Even the captain didn't know where they were going. The ship had been chartered for a voyage of several months, to an unknown destination. He and the crew were well paid, and didn't care where they went.

Dick drew a sealed envelope from his pocket, detached a slip of paper and handed it to the captain. He read the note, then repeated it. "You are to keep the destination to yourself. No one on the ship is to know where we are going, and you will not mention it to me again. I hope that we have good weather, Captain, and a fast trip."

Barrow felt like a fool. Repeating messages as if they were his own—without the slightest knowledge of what they were about. He was supposedly charting the course—and didn't have the slightest idea where they were going.

When Dick reached his stateroom (after answering questions from everyone on board—and telling them nothing) he found Dolores sobbing. She had kept her smile until the boat sailed. Now she was crying her eyes out. It was not a new sight, as every woman on the ship seemed occupied in the same way, with the men trying to comfort them.

As Dick sat down beside her, he could feel the throb of the diesel motor. It seemed to carry the rhythm of ad-

venture through the walls of the cabin, giving the feeling of the unknown. For a long time there was silence while Dolores held one of Dick's hands for protection.

"Dick! We only have *one* cabin! I'm supposed to stay here with you—and I *hardly know you!* Morquill told me that I must stay here, there are no extra rooms."

"I'm sorry, Dolores. We will just have to put up with things as they are. We've got into this and will have to see it through. After all, we *are* man and wife, and the people on board would think it strange if we didn't occupy the same room. There are two bunks, so I won't have to sleep on the floor. It will be a long trip, and we might as well enjoy it as much as possible."

Days changed into weeks as the ship plowed steadily south. They stopped at one port for a few hours to refuel, but there was little to see. The ship was slow and it felt good to walk on land again. But no one spoke enough English to answer questions.

It was the only time they sighted land until just before the end of the trip, when small islands began to slide by. Some within a few hundred feet, others just visible in the distance. Morquill hadn't appeared on deck during the entire trip, but now he approached the rail.

His face lighted with an ethereal glow as he gazed across the blue water. He looked like a man who was sighting his home after many years of absence. Dick couldn't help but feel glad for him, while cold chills of misgiving crept up and down his own spine. Their voyage was ending at a far different place than he had pictured in his mind, and quite the opposite of the description which Morquill had given of gigantic mechanical development.

They were passing by small south-

sea islands, where mechanical equipment was out of the question. They hardly appeared *habitable*!

When the captain approached Dick, Morquil joined the conversation. "I'll give you the directions, Captain. Mr. Barrow is not feeling well, and I can do it for him.

"In about an hour we will reach the island, and I will point out the entrance to the harbor. It is well protected and there is no need to worry about any storm while we unload."

Every inch of space in the ship was packed with supplies. There were crates of books as well as pieces of machinery. Considerable radio equipment included assembled sets as well as parts. There were rifles and even one small cannon. Several crates of chickens and turkeys joined the other things on the beach. Then to the amazement of the party, a crate of pigs appeared.

IT required three days to empty the ship, and with each passing hour the little party grew more apprehensive. It seemed as if they had been transferred to an island to start a new civilization, instead of a place where mechanical development was far advanced. Because Dick was the leader of the party, the others began to look at him with hatred; Morquil was almost forgotten.

When the last piece of equipment was covered with heavy tarpaulins, they constructed a shelter against one side of the pile. It was almost dark when everything was finished, and the captain decided to wait until the next day to sail. Everyone was invited on board the *Primrose*, for a farewell party.

Dick was forced to call a meeting in the main cabin, to forestall danger of the party deserting with the ship. Morquil had instructed him carefully.

"Friends, we are all facing a great

adventure. I'm in no different position than you, except that as leader I am responsible for whatever happens. I must take all blame for whatever comes, yet know that it will eventually work out as we expected.

"You all know that it is forbidden to talk about this trip, or to surmise our destination. I can assure you that it is done for your own benefit, and later you will appreciate the fact that you did not know the future. I can't say what the next few days will bring to all of us, but he assured that everything you have been promised will be fulfilled.

"At the moment it seems impossible that things can turn out as we expected, but they will! You must simply be patient, and do not lose faith in this great adventure."

As Dick finished his speech, Morquil smiled, well satisfied. Dolores even smiled faintly, although it required effort to overcome her feeling of disaster.

The following morning everyone went ashore, and John McCarthy went around trying to aid Barrow in cheering up the party. He lied like a trooper, whispering to everyone that he had discovered something that satisfied him about the marvelous civilization they would reach before long.

Word of this reached Morquil, and he hurriedly called Dick and John out of sound of the others. He appeared almost frightened, and the moment they were alone, he spoke.

"What have you learned? I wanted you to know nothing, and it is better if you are ignorant. Whatever you learned is too much, and may upset the future."

John started to laugh, then seeing the expression of agony on the face of Morquil, he stopped short. "Don't worry. I haven't learned *anything*! I simply tried to help Dick keep the people sat-

ished. They were getting so restless they *needed* something. In my home town I was know as a famous liar, and thought my ability might come in handy."

Slowly the agony disappeared from Morquil's face. "Someday you will understand how much you have done for me, John. You will never regret it!"

The McCarthys remained jovial, and tried to keep up the spirits of the others as the days of loneliness passed.

Philip Jones and his wife were quiet, and waited patiently. Andrew and Emma Smith had taken over the cooking, and served the meals. George and Mary Martin were the youngest couple, and Dick doubted whether either of them were past twenty-one. The others were all nearer thirty. They spent their time side by side, gazing over the sea, perfectly happy in each other's company.

Jerold Brown and Peter Yarbrow were constantly fishing, from the collapsible boat, while their wives played cards.

One night they were awakened by brilliant flashes of light. Running to the beach, they watched in amazement.

They appeared like big guns firing just above the surface of the water, a few miles away. While they watched they gradually faded out. It was like a terrific electric storm, and the little party drew close together for comfort.

When the lights faded out entirely, Morquil told them to get some sleep. They would have to move equipment aboard a new ship the following day.

With the first streak of dawn Dick was back at the edge of the beach, straining his eyes into the gloom, but it was almost an hour before any object was visible.

After breakfast the ship was much plainer. They could see a rounded hull, like the top of a huge submarine, above the water. One of the women remarked

that she would *stay* on the island before she'd enter an undersea ship. The trip on the Primrose was bad enough, but it wasn't *below* the surface.

Morquil called them within the canvas shelter, as if to make a speech. He held a small hall in one hand, and while they waited for instructions it landed in their midst.

A cloud of yellow vapor burst from the object, and everyone in the party slowly sank to the ground. Morquil joined the others in unconscious stupor; a victim of his own gas.

CHAPTER III

Strange Destination

WHEN Dick opened his eyes, there was a feeling of motion to the head. The strangeness of the ceiling overhead drew his attention. It was not canvas, but shiny metal, almost purple in tint.

Suddenly he sat up. Dolores lay beside him. As his eyes cleared of the lingering mist, objects in the room became plainer. They were in a luxuriously equipped cabin.

Dolores slowly opened her eyes. A moment later she sat up beside him. Glancing through the porthole, beyond the bed, she turned away with a groan.

"We *are* under water! And deep! I can't see a thing but strange blue light."

When Dick joined her, his forehead puckered in a frown. "No, Dolores. It doesn't look like water, it looks more like—No! *It can't be!*"

For several minutes there was silence while he gazed through the opening. Dolores had lost interest in the outside and was examining the fittings of the cabin. It had everything that could be desired in a first class hotel room, and many little toilet articles besides.

Suddenly Dick turned away. "*It's true! We're in the air—or above it!*"

Dolores, this ship is an *aircraft*!"

"Never mind, Dick, this room is *beautiful*! Whether we're flying or swimming, this is the nicest room I ever had. It has *everything*, and *look* at the dressing table!"

Dick sat down in amazement, a smile slowly spreading over his face. Dolores was happy—wherever they were. The room was all that mattered. But he couldn't understand why Morquil had gassed them, and put them on board unconscious. *He* would have enjoyed seeing the new ship.

When a knock sounded at the door, Dolores was unpacking her clothes for the first time since they left the Primrose. Turning the knob, Morquil stepped in.

"I'm sorry, Dick, that I had to use gas, but I knew the people would be afraid of boarding this ship. John McCarthy is down in the power room already, examining the machines, but some of the others are upset about the transfer from the island. I hope you don't feel resentful?"

"No, Morquil. We're satisfied. If you don't believe it—look at Dolores. She decided to like this room the minute she saw it, and is unpacking already."

The worried expression disappeared from the strange man's face. "I had the cabins equipped for women, as I know they are particular about such things."

"Would you like to see the ship? It will be your home for a long time, and you might as well get acquainted. I'm sorry that no one but myself understands English, but you will have ample time to learn our language during the voyage. You must speak it fluently by the time we arrive."

As they started out, Dolores dropped the dress she was holding, to join them. Curiosity overcame the desire to

straighten out her clothes.

Entering a wide passage, they turned to the right. It ended abruptly in a room with several comfortable chairs. Three tables occupied the center in uneven positions, the underparts filled with metal covered books. Two men of Morquil's race looked up at their approach.

Dick returned their friendly smile. When Dolores smiled they appeared embarrassed; but greatly pleased. Barrow noticed that one of them was examining a book in English; the illustrations seeming to fascinate him.

A narrow passage, beyond the main cabin, led to the control room where three men sat in swivel chairs. The instrument board was a marvel to Dick, and he watched for several minutes. It would require months to understand even a small portion of the gauges.

The ship was built with two decks, and a large hold beneath the lower floor which contained the machinery. The strange men were quartered on the lower level, with the exception of Morquil. His cabin was next to the one occupied by the Barrows. The McCarthys were on the opposite side of the passage, in a room slightly smaller than the one allotted to Dick and his wife.

The quarters of the remainder of the party were smaller, but still quite comfortable; all located farther back on the same passage.

MORQUIL was proud of the ship, and displayed each section with pride. He opened every cupboard door, and showed them through all of the cabins. They were stopped for a while, when they met Mrs. Yarbro, trying to dispel her fear of the strange craft. The others appeared to be taking their new quarters for granted, and settling down for the trip.

The main cabin was toward the front

of the ship, while the dining room was at the rear; the staterooms on the passage between. One stairway led to the lower level, from just back of the control room, another from the dining saloon. A ramp beneath the rear stairway led to the hold of the ship. When they started down, Dolores returned to her cabin. Her interest ended on the upper decks.

Dick spotted John, bending over one of the machines, so engrossed that he didn't hear their approach. One of the crew stood nearby, watching.

When McCarthy saw Barrow, he nearly burst with enthusiasm. "This is the greatest thing I've ever seen! Why, it almost talks! Do you know, this little machine actually picks up the orders from the control room, and *adjusts every machine down here!* Darned if I don't think it's got a brain!"

When Morquill led the way toward the front of the hold, John was still engrossed in the apparatus. "He will be a valuable man to you, Dick, and can solve many problems that you would otherwise have to do yourself. He will make an able assistant."

Passing by the heavy machinery, they approached an enclosed section, which appeared to be of recent installation. Stepping through the doorway, Morquill threw a switch which lighted every corner, then watched expectantly as Dick examined the strange objects. It appeared to be a colony of metal beehives, with covered passages between.

"It is our home, Dick. This room contains everything in miniature that you will see when we arrive. Each of the smaller domes house thirty thousand people, the large one three times that number. We are born, live our lives, and die beneath these metal ceilings. It will be your job to care for them.

"Everything beneath these domes is

exactly as it is in our cities, except that the machines are dummies. This model room was installed so you could study our civilization during the trip. When you arrive you will be ready to start work.

"You, and you only will have a key. You may bring any member of your party here that you desire, but it is not necessary for them to understand the entire civilization. There are only six cities, including the large one, where you and John McCarthy will be located. The other men will each have one dome under their control.

"It is easy to travel back and forth, and you may gather together at any time, although each of you will have duties in different sections. While you are overseeing the work in the smaller cities John can look after the capitol. Upon your arrival in Yorpun you will take complete charge of all mechanical work. It will be your responsibility from then on."

As Dick slipped the key in his pocket, he felt the weight of a country settle slowly on his shoulders. Two hundred and ten thousand people—entirely dependent upon *his* control of the machines.

Where could this settlement be? They had sailed darn near to the end of the world in the Primrose, and now they were going even farther. From the way the metal domes covered the cities, it might be at the south pole, and still be habitable.

By the time they returned to the main cabin, it was dinner time. It was past mid-day when he regained consciousness, and Dick was hungry.

Mrs. McCarthy was knitting a sweater for her husband, while three of the strange men watched in amazement. Her knitting needles seemed to hold them spellbound. The other members of Dick's party were sitting around try-

ing to decide what to do. But the sound of the dinner gong, made them forget their worries.

Dick had to go down to the hold and call John, who was still watching the master machine. If he hadn't been dragged away, he would have spent the night examining the strange device.

The meal was simple, but they all enjoyed it. It seemed to dispel the gloom from the party, and they appreciated McCarthy's jokes. There were fifteen of Morquill's race in the crew, and all but the men at the controls joined them.

Knives and forks stood at the places set for the passengers, brought from the supplies on the Primrose, but the crew ate with long narrow spoons. Table silver was evidently unknown to this race of people.

After dinner Morquill called them to the main cabin, and for the first time told about the destination. All that had kept them from losing hope long before, was his promise of greater comfort and luxury than they could hope for in their native land.

"I know that some of you resent the fact that you were unconscious while put aboard this ship. But I know you would hesitate to come of your own accord. One woman said that she wouldn't go on an *undersea* ship, and she would be more afraid of this.

"You will be amazed to know that we are now leaving the atmosphere of the earth that you have always known. *Our destination is on a different planet!*"

CHAPTER III

Morquill's Story

FOR a long time there was silence, then Mrs. Jones fainted. McCarthy took it without flinching, and his wife

was satisfied if he was. Dick had suspected something almost as strange, and did not seem surprised. Dolores looked at him for guidance. He nodded reassuringly. The others shut their lips tight, feeling that they had been taken prisoner without hope of escape.

After a pause, Morquill continued. Mrs. Jones had recovered her composure and was staring at him with undisguised dislike.

"I'm sorry it had to happen this way, but I would not have been able to take sufficient people if you had known where we were going. Some of you might have come, but I treated every one alike.

"I also was unconscious from the gas, but the crew revived me. I had to look after the loading of the supplies, and have the cabins prepared for you. It was much nicer that way than if you had resisted, and were put on board by force.

"I shall start at the beginning of my story, and let you judge for yourselves as to whether we have done wrong.

"The existence of my world depends on the perfect operation of machines. Even our atmosphere is manufactured and kept at proper temperature within sealed domes, to protect us from the natural gases of the planet. We live on this planet through necessity—*not desire!*"

"Our race landed there very long ago after escaping from a planet that was falling into the sun. Their space ship ran short of fuel within the gravity pull of our present habitation. It was difficult, but they succeeded in constructing gas-proof shelters, and slowly improved conditions for living.

"We never knew what happened to the other space ships from our original planet, but they may be distributed throughout the universe. Your *own* ancestors may be of the same origin as

ours. The similarity of our forms tends to prove it.

"Eventually metal domes were built, and the race prospered within. But our lives depend on their being kept in perfect repair. Machines were built which do practically all of the work in caring for our wants, and from the first we have adjusted our own gravity; to live normally under the gigantic pull of the new planet, which to you is Jupiter.

"Through the ages our lives became easier, and required less manual work. Machinery did everything we desired. Most of them were automatically repaired and serviced, while the permanent machines ran on through the ages without care. As generation after generation lived and died, under these conditions, we lost most of our former knowledge.

"When one of the atmospheric machines ceased to operate—we *could not repair it!* Instead, one of the other machines had to be speeded up, and the atmosphere pumped into the extra dome.

"At the height of our mechanical development this space ship was built. Then the race lost interest and were content to live in ease, without attempting to reach another planet. Three generations ago our people discovered the danger. Even our bodies had deteriorated until we *could not stand hard work*. The machines had begun to break down—we were headed for extinction!

"When I was a young man they succeeded in finishing the equipment on this ship. Three generations had been required to create enough fuel for only *two voyages!*

"I was selected as the man to explore the strange world, which we had been studying with the instruments of our ancestors. We had determined your exact mechanical development, and

knew that you were capable of furnishing the engineers which meant life or death to our race.

"It is twenty years since I was left on the small island, and the ship returned to Jupiter. At that time we decided the date for this trip, to bring me back. In the meantime I traveled half way around the world in a small metal boat, before being picked up by a tramp steamer, as I dared not land near any civilized country. After I reached a settlement I had to learn your customs and language, and many other things about a completely alien people.

"I was furnished with an ample supply of gold, as we knew it was the metal that you valued highest. This purchased many things that would otherwise have been impossible to obtain, and also brought me a great deal of trouble. I was robbed of most of the wealth before I had been in civilization a year. The fact that a great deal was left on the small island is all that made my venture possible.

"I SPENT three years in an institution before they decided that I was a normal human being, and could take care of myself. I dared not tell them that I came from a different planet, or I would have failed in every way. I learned many things about the people of your world, but mainly that gold could buy almost anything.

"I lived for several years, by working at anything that I could obtain, trying to find someone who would finance an expedition to the island. No one would believe me when I said that I knew of a great fortune in gold. I finally found a man who *did* believe me, and he received one half of the gold as reward. It was not until then that I could begin the work that I started out to do, and nearly ten years had passed.

"I planned for several years before I dared try to obtain the people I needed. I studied everything I could about your engineering, and found that it was not of the same type as our own. For this reason I did not want a graduate engineer, as he would have to learn everything all over again in my cities.

"When I advertised for men, and told you of the wonderful mechanical development, it was the truth. I did mislead you to a small extent, in obtaining your promise to come with me, but the existence of my race depended on your work. My people will give you anything you desire if you will help them.

"When we left our cities, we didn't know whether we could even escape from the planet in this ship. There was no opportunity of testing it, until we started on the journey. Even the men at the controls had never handled it. All of their knowledge was obtained by years of practice, sitting in a stationary ship.

"When they left me on the island and returned to the planet, they *hoped* I could accomplish my purpose, but the chance of success was pitifully small.

"I have never enjoyed the comforts of other members of my race, but have spent my life in an alien universe, carrying around my big head; without friends or companionship. The gravity within our enclosed cities is lower than on your planet, making it easy for us to walk.

"After several years of study and planning, I knew there was only one way of accomplishing what I went after. It is the way I have done it. No one would have believed that I came from a strange planet; they would have thought me out of my mind. If I *had* persuaded them, I could have found no recruits for the work, no matter what I offered. I *know* how anyone feels about leaving their own planet, where

they were born and brought up.

"You will find that the machines need work badly. Some of them are running only because we use several times the normal power to turn them. Our mining machines have not worked for more than a generation, and the mines remain idle. The metal supply is running short.

"The equipment which overcomes gravity, also furnishes us with power. When weights are lifted, with gravity almost eliminated, then allowed to sink with the full pull of Jupiter, it creates enormous amounts of energy for every use.

"It will be months before we reach our cities, and I hope that by that time you will feel satisfied with your forced migration. To my race, it was the only course which would avoid annihilation within a few generations.

"At first it will seem terrible to be shut in beneath a metal cover. But when you become accustomed to it, that feeling disappears. You depend just as much on a ship at sea or a plane in the air, but never think of it in the same way. We *must* trust you, as we will not know whether you are repairing or destroying our machines until we see the results.

"You will be given complete power and can draw upon my people for all of the help you need. You will be even more powerful than the rulers of the domes. My people decided that you deserved this position, long before we attempted to reach the earth and bring you back.

"I came to your country because the mechanical development is greater than in any other nation. You have greater love for engineering, and more of you are employed that way.

"I have told you everything about my home and my people, and leave it up to you as to the way you will act.

We have only done what was necessary for the survival of our race, and hope that you will forgive us for stealing you from your own planet.

"You have complete freedom of the ship, to come and go as you please at any time. You are now considered part of our own population, and we both have the same interests. We hope you enjoy it."

FOR a moment Morquil gazed into the faces of the small gathering of people, then slowly walked from the room. There was complete silence, broken occasionally by a sigh as some thought of home exerted itself. An hour passed and they still had not moved. Each seemed to be waiting for one of the others to break the silence.

Finally Dick got to his feet. His words came slow, as if carefully weighed before using; the others listened intently.

"I know what each of you must be thinking; because I've been thinking the same thoughts. We're all in the same boat, without chance of leaving—headed for *Jupiter*! We have seen the last of the world where we were born. Either we take up our lives in this new existence, or die out here in space—destroying Morquil's race as well as ourselves.

"He says they can not survive without aid. Our own world did not need us, or give us much for our efforts. If it had we would not be on this strange space ship. Morquil hired only people who were willing to leave their homes and friends—and we *applied* for the work. There really is not much that we can complain about.

"For one, I intend to do all that I can to make our future home the greatest civilization in the universe. Perhaps in the future years it will be possible for us to pay a short visit to our

former planet. Perhaps our children will follow in our footsteps; enjoying greater honor, comfort, and luxury than they could possibly have had in our own world. I received little from my fellow men, and have *already* received more from Morquil than I ever had before."

As Dick sat down, John McCarthy's voice boomed out. "I'll follow Dick! He's the boss of this party, and if he's satisfied, I am. *Boy!* We sure do go places when we get started!"

The general laugh broke the tension, and each one spoke after a little hesitation. Each man slowly grasped the gigantic task that was facing them, and felt honored as a result.

It was a new world, farther advanced than their former habitation—which needed *them* to care for it. It was a big bite to chew—but they would do it!

Dick remained in his chair long after the others had gone to their cabins. His mind dwelled on the complete happiness and satisfaction that lighted Morquil's face, when informed of their decision. In that moment he was repaid for a lifetime in a strange world, amongst alien people. His return to Jupiter would be triumphal, with the Earth people as his friends; come to save his race from extinction!

Barrow's mind wandered on, to the gigantic task that faced them. His would be the greatest responsibility, as head of all the domes. The other men would have only a single city to care for. The thought of McCarthy as his assistant was comforting; he would be a great help.

The strange race of beings were putting every trust in the earthmen—putting themselves at the mercy of the seven strangers—and Dick knew the men would *earn* that faith!

He jumped when a hand touched his shoulder.

"Dick won't you take your wife to her room—she feels sleepy!"

CHAPTER IV

Voyaging to Another World

DURING each waking period, Barrow spent many hours in the room with the miniature domes. They were beautiful models, which could be opened or moved as desired, by small levers on the foundation. Wires as fine as hairs were strung from one spot to another, while metal the size of thread represented heavy cables.

Slowly, an understanding of the strange civilization formed in Dick's mind, and he drew sectional maps of the location of all mechanical equipment. Other maps pictured the streets, so that it would be easy to reach any desired destination. When this was done, Morquíl sent one of his men down to make as many copies as desired. Each engineer was to have a complete set.

The earthmen had learned to keep track of the time according to the system on the ship. Each "lix" included the time spent in sleep as well as one waking period. It was twenty-seven hours in length, but they all thought of it as a day.

Each lix was divided into thirty-six "migs." Each mig being just forty-five minutes in length. They were able to keep track of each mig, by their watches, although the time pieces were useless for any other purpose.

One lix, Dick returned the friendly smile of a member of the crew, and to his amazement the man spoke. "Chicki-boo." For a moment Barrow was stumped, then realized that it must be a greeting.

When he was greeted the same way, by a second and then a third man, he

tried to imitate the words. The man from Jupiter was so pleased that he almost danced, then spoke again. "Goot-mording."

Dick's jaw almost dropped open; the man was trying to speak *English*!

Suddenly Barrow laughed. Morquíl had been instructing his crew in the strange language, as well as telling them to greet the earthmen in their own tongue. He must speak about holding classes to learn the language. They would have to understand it, and the sooner they started the easier it would be.

The following lix, Dick stopped on the ramp to the machinery hold to listen. McCarthy was humming the tune of a song that had been the rage at home, but the words were "chicki-boo—chicki-boo—chicki-boo."

Barrow smiled as he approached, but the big Irishman didn't realize the reason. He was almost bursting with news.

"I've got it, Dick! I've found the key! Don't laugh, but I've discovered the working principle of this little machine, and it will lead to the secret of all others. In a month I'll know how this crate runs."

"Don't worry, I'm not laughing, John. I think it's great that you've got this far. I only wish the others would show as much interest. Not one of them has been down here for more than a few minutes, and they know little more than when we started."

"Aw! Don't take it that way, Dick. It isn't their fault. Didn't you ever see their *wives*? Those women won't let the men out of their sight for three minutes. Your wife and mine are different—they *trust* us! If we tell 'em the ship's okay, it's okay; but *them*—say, they can't tell their wives anything. The women in their families do *all* of the talking."

Dick laughed, but knew that it was close to the truth. The other men in the party were tied to their wives' apron strings. Aside from Dolores and Eileen McCarthy, none of the women trusted the space ship. They were afraid it might fly to pieces at any moment, although they had overcome their fear enough to find means of entertainment.

Small devices in the cabin showed miniature movies, with words in the tongue of the dome cities. Discovering this created desire to understand the language, and they eagerly attended the classes.

One lix Dick found Jerold Brown examining a piece of machinery. A few lix later Andrew Smith had joined him. Soon every earthman was spending his time in the machinery hold, with McCarthy acting as instructor. He would accept no excuse for being late at his classes—and they all arrived on time!

WEEEKS slipped by as the ship drove on through space. The earthmen learned to admire the men from Jupiter for their constant good-nature, although they were slightly childish.

The crew of engineers were slowly learning the rudiments of Jupiter's science. Barrow through his study of the domes, and McCarthy through study of the machines, far surpassed the others. At times both men spent hours in the model room, at others Dick examined the machines beside the Irishman. They compared notes until each knew the other's findings.

Dick took all of the men into the model room once every third lix, and spent four hours instructing them in the civilization. Each man had his own set of maps, and marked down facts about his future location. Dick copied their notes on a large map, that

covered all of the cities. They used numbers to signify different mechanisms, to make it easier to describe equipment that was duplicated in more than one dome.

In a month they were able to carry on light conversation, and from then on mastery of the language was faster. The women far surpassed the men, due to desire for entertainment.

When he was able to question the crew, Dick received a terrible shock. *They knew less about the ship's operation than his own men!* They didn't understand their own equipment!

The people of the domes were content to enjoy the mechanical wonders of their ancestors—without hothering about how they ran. They used equipment for every purpose, without the slightest interest in why it worked. The earthman suddenly realized what a gigantic task they faced. *Seven men*—to rebuild a civilization!

The men at the controls knew what reaction would take place by movement of a lever, but *didn't understand why!* Dick became slightly worried about reaching their destination—it was beyond all reason. Earthmen wouldn't have attempted to operate equipment they knew nothing about, by movement of controls to obtain the proper action.

It was no wonder these people had found it necessary to find engineers to run their machines!

Months slipped by as the ship moved steadily toward the giant planet. Every piece of equipment seemed to be the answer to perfection. This voyage had taught them more about mechanics than was covered in a complete engineering course on earth. It was of a far different kind, with gravity the basis of all operation. Even the space ship employed some of the same power, drawn from the nearest heavy body, then amplified until it reached enor-

mous proportions.*

Peter Yarbrow was a practical chemist, and spent many hours trying to analyze the fuel. It was highly inflammable, yet could stand terrific compression without effect. When it was allowed to expand again, it reached the flash point immediately, creating enormous amounts of heavy gas. He believed it might be duplicated from crude oil, properly refined.

When Dick learned that there was a history of the space ship, in the metal books, his curiosity was aroused. He could read the language of the domes slightly, but not enough to study the intricate explanations. It was through these books that the dome men had learned to control the ship, and set the course for any desired planet.

Morquill's aid was enlisted, to translate the text, and he learned some amazing facts. A description of the fuel was given, but the base for manufacture was unknown, being of natural origin on Jupiter. As Morquill read farther and explained sections that Dick couldn't understand, the Earthman felt uneasy.

The crew had abandoned all hope of returning to their home planet, the first time they started from the Earth. They didn't understand what it meant to feel responsible for equipment. They manufactured enough fuel for two trips, according to the rating of consumption in

the books—but Dick wondered?

The tanks were filled to capacity before the first trip, and hadn't been tested since. The happy dome people didn't consider that their ancestors might have been mistaken, or that actual operation might vary from the original plan.

FOR the first time in twenty years, the gauges were examined. Barrow and McCarthy crawled through the dust-coated passage beneath the floor of the machinery hold. They found a light switch, but the bulbs were so dust coated that only a faint glow shed on the surrounding metal. They sneezed and coughed, as the dust-laden air filled their lungs.

"Darned if you don't get the craziest ideas, Dick. What good will it do to know how much 'ship juice' there is, anyway? We can't *make* it! This hole wasn't built for self-respecting men to crawl through."

"I don't know, John, but this trip may not be as easy as it appears. They've been driving at full force for months, when it seems to me that less power might carry us when we're not within the pull of some planet. I want to make *sure* that there's plenty of fuel. According to the books, the designers didn't expect the ship to be driven this hard."

John did a little cussing when they located the gauges, and found them so thick with grime that they had to be cleaned. He headed back through the dust for a cloth, with Dick's laugh following. "Alright, alright, but don't rub it in. Just because you happened to be in front of me, and there isn't room to pass, don't give you the right to laugh. Some day you'll be eating your share of dust, and will I laugh! I bet that the domes are *all* a mess."

Dick wrote down the reading of each

*This gravity power was derived from huge weights swung on an axis that could be faced toward any point of the universe, and the slightest pull resulted in force that was exerted on the fuel. The explosive mixture remained at constant pressure, creating a smooth driving medium. Discharge of the fuel under high compression resulted in greater power than could be obtained in any other way.

When the fuel shot through the tubes, it exerted force on the gas cloud that was far above the actual speed of the explosion. The heat of combustion was reduced, and the ship operated without effect from the blasts. The tubes were small, yet the power expended was beyond anything ever accomplished on earth.—Author.

gauge, as John cleaned the surfaces. He couldn't understand the strange numerals, and had to go over them with Morquill. Both men breathed a sigh of relief as they crawled back through the floor of the hold, and dropped the trap door in place.

An hour later Dick began to worry. According to Morquill, the tanks were *less than one-eighth full*. The big-headed man had gone over the figures twice, and was showing signs of agitation as he checked them again at Barrow's request. When he glanced up; Dick knew there was no mistake.

"The fuel is low Dick. According to the other trip, the greatest use of power is at the time we approach the planet, to fight the pull of gravity. Our trip from earth is only half completed, with the greatest need of fuel still ahead. You must think my race very stupid not to have thought of it?"

It took Dick a long time to answer. His mind was searching frantically for some solution. It was useless to ask help of the crew—they couldn't even *think* scientifically!

"No, Morquill. I don't think you're stupid, but I do consider your people very foolish. From the appearance of things *we will never reach the dome!*

"Unless something drastic is accomplished, the ship will smash to pieces on your planet. You don't know *anything* about the ship's operation, and we've only studied it for a short time."

They decided to inform the men immediately but say nothing to the women for the present. Within an hour of the discovery, Morquill warned the men at the controls to conserve the power as much as possible.

Every operation of the ship, was dependent on fuel. The generators for heat, light and controls, were turned by discharge through the tubes. At least *one blast must be fired at all times* to

keep the controls sensitized, and develop power for emergency equipment. The other tubes were silenced.

During the rest migs Dick couldn't sleep, but spent every minute talking to John McCarthy. There *must* be some solution—and *they had to find it!*

CHAPTER V

An Engineer's Mettle

IN the morning the earthmen were called together. They came with smiling faces, which slowly changed to apprehension.

There were many suggestions in as many minutes, but none that gave a possibility of accomplishing the impossible. They had to stretch the fuel—*without visible means of stretching it!*

The women believed the meeting was a routine course in mechanics, and went on enjoying their entertainment. The men explained they were bothered by a knotty question about the machinery to account for their worried concentration. It would have been a terrible handicap if the women discovered the truth.

Three lix passed with little change. The fuel had been cut down for a while, but the ship didn't hold its course. Every tube had to be fired to hold the direct route for Jupiter. They were constantly cutting into the meager supply that remained—and *had to overcome the deficiency!*

Due to the slight conservation of fuel the ship had been operating far below efficiency, and the cold of space began to seep through the walls. This affected the dome people more than the earthmen, and they suffered torture. Any change in temperature was unknown to them, they were chilled at a few degrees below normal beat.

Suddenly, during dinner on the third

evening, Peter Yarbro jumped up from the table. The other men fastened eager eyes on his face, while the women watched in amazement.

He started to speak, then remembering the women, sat down rather quietly. "I—I think I've found the answer—to our *problem*! If you will join me in the hold, when we finish eating, I would like to talk it over with you."

Mrs. Yarbro was even more amazed. "Peter! I'm surprised at you. Jumping up from the table so excited, just because you happened to think of the answer to a *problem*! You ought to be ashamed."

In spite of his worries Dick lowered his head to hide the smile. If only Peter's wife knew what that problem was, she might not think it so strange.

Hardly a man touched his food, and as soon as they were out of ear shot of the women, he spoke what was in his mind. The crew heard him at the table and many of them gathered to listen. For the first time in their lives they were worried. Their lives depended on the earthmen before they even *reached* their planet.

Yarbro hesitated. "I'm not so sure now, that I *have* found the answer. When it came to me, I thought it was simple, but now it seems more like a dream.

"Since knowing that the fuel was low I've racked my brain for something that might be used—and it had to be on the ship. Every *other* man was looking for a mechanical answer, and my efforts would be of little use. So I've searched for a chemical.

"*Water* is the only liquid in any quantity. I discarded it so many times that it left a headache, but my search always came back to the same place. It's the only thing we've got.

"All other liquids are in too small amounts, even if they could be used,

and the ship is equipped only for chemical fuel—in *liquid form*!

"At dinner when I became so excited, I thought that water would do the trick. Now I don't know. It has oxygen in large amounts, which is vitally needed, but that's the only advantage.

"Even if we dared try, it might injure the tubes. Still I believe it's the only chance of salvation. It's the one substance on board, in any large quantity. What do you think?"

There wasn't a sound as the minutes passed. Each man searched frantically for the slightest hope; searched for the *one* chance in a thousand!

Dick finally broke the silence. "What was *your* plan, Peter? You must have thought of something?"

"No, that's just the trouble. I thought that water might mix with the fuel, even fire with it. It was only a brain storm I'm afraid."

After a moment Dick spoke again. "It *can't* be! Since there is no other substance—we *must* use water! There has to be a way—and we've got to *find* it! We might as well use up the water and die of thirst, as to drift around in space until we starve to death, or die in the dive at Jupiter."

Twice Mrs. Martin came down the ramp to take her husband to bed, but Dick sent her away. The men would stay there until they had found a solution—they *had* to! The fuel was fast disappearing!

MORQUIL still sat in the background. The other men from Jupiter had gone to their quarters. He could offer no suggestion, but listened carefully to every word they spoke. Finally he stood up.

"I hope that you can forgive me. In the last three lixs I have regretted that I ever saw your earth. It were better

that my people die, than for us to carry people from a happy planet to die in space—because of our stupidity. We are no better than children without cares or worries. The men of the crew realized the risk, before they left the domes—but it is not your fault!”

“Aw, sit down you big-beaded numbskull!” McCarthy’s voice boomed out. “We don’t blame *you*! We’ll find some way to run this crate, and get there in one piece. You just made us go to work before we expected. Why! A problem like this is *simple* on earth—they’d solve it in *no* time! You just go to bed and stop worrying. We’ll have everything fixed by morning.”

Morquill’s expression changed slightly, and he almost smiled. He started for the ramp as if taking the words literally, but half way up he faced the little gathering again. “Thank you, John. But I haven’t forgotten that you were a famous liar in your home town—and you haven’t lost your ability. Thank you anyway, you’re very kind.”

When McCarthy turned toward the others, he looked rather sheepish. But the forced smiles he received made him feel a lot better.

Hours passed, while each man told everything he had ever known about water. At last Dick stood up. “We’ve covered every possible reaction, and many that are seemingly impossible, but have overlooked one very vital point that will either help or hinder greatly.

“The fuel is subjected to terrific pressure. Naturally, any water that was used would receive the same treatment. In the compression chamber the pressure rises very fast, which must develop high temperature. The result is that we would not have water—we’d have *steam*! It would be almost *dry steam*!

“Water in the liquid form couldn’t discharge oxygen fast enough to affect

the fuel, but as steam it might. There is a good chance that steam may even *increase* the explosive power to a point that we can’t even imagine. There’s only one way to find out—*try it*!

“Every man here will admit that John has the most practical mechanical brain. It will be his job to find a means of injecting the water in the proper amounts. The rest of us can try to find any kinks in the system that he suggests. He knows every piece of equipment on board, and can pick whatever is best suited for the purpose.”

As Dick sat down, John got to his feet. “This is one time that I’m ahead of you. While you’ve been talking I’ve been planning a way to do just that. There’s an extra firing tube that can hold the pressure we want.

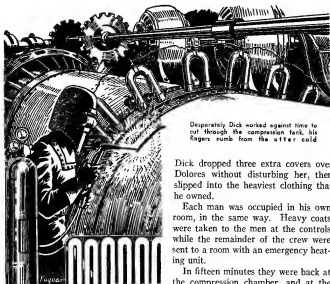
“Fuel for all the blasts is compressed in one chamber, then discharged through any desired tube. If we put the water under the pressure, with the hydraulic system, and let it seep into the chamber at a set rate—it *might work*! Valves can control the steam perfectly, and regulate the flow to whatever is desired.

“The tube will have to be shut off from the fuel tank every few hours, to be filled. Preheating the water will develop steam pressure, and it won’t draw enough from the hydraulic system to affect the operation of the blasts.

“What do you say, shall we try it? It means shutting off all but the emergency tube for several hours, and it will be *cold*!”

Within five minutes they were hauling the heavy tube from the storage room. In an hour everything was ready to assemble, and each man knew exactly what work he was to do. A pipe line was run from the water tanks, to fill the steam chamber in position.

Dick was building an electric heating unit to encase the entire tube; which



Desperately Dick worked against time to cut through the compression tank, his fingers numb from the utter cold.

could be regulated for any desired temperature.

HALF of the rest period had passed when the chamber was finished and they were ready to cut an opening in the compression unit. Perspiration poured down the body of every man, but not from the exertion. Each minute that passed ate deeper into the fuel. If water couldn't replace the liquid, they were helpless.

They wanted to install the tube, while the women were asleep. The ship would be too cold for comfort for a long time after the blasts could be started again. When the heating units in the hull were shut off it would become freezing inside.

Men raced through the ship, stopping at their staterooms on the way.

Dick dropped three extra covers over Dolores without disturbing her, then slipped into the heaviest clothing that he owned.

Each man was occupied in his own room, in the same way. Heavy coats were taken to the men at the controls while the remainder of the crew were sent to a room with an emergency heating unit.

In fifteen minutes they were back at the compression chamber, and at the touch of a button the blasts were silenced from the control room.

By the time an opening was cut in the heavy tanks, the cold had begun to creep into the ship. The men worked desperately, and for a while perspiration dampened their clothing. Then the chill crept deeper—and they shivered. Their fingers grew numb, and they had to warm them over a small electric unit, but the opening slowly enlarged beneath their torches.

When the tube was fitted into the hole, and the metal began to flow around the edges, even the torches seemed to throw little heat. Dick knew his nose was frosted, and warned the others not to touch their nose or ears. According to John's watch it required three hours to fit the tube in place.

When they rang for the power to be turned on, they waited in vain. When

minutes passed without reaction, they glanced at each other in consternation. Brown and Martin raced up the ramp while the others waited. Within a few minutes the tubes began to fire and warmth slowly drove back the numbing cold.

Water pipes had burst, and they hurried to stop the leaks. The main tanks were uninjured, as the cold hadn't penetrated the big supplies in storage.

Dick suddenly realized that Brown and Martin hadn't returned. When he reached the upper deck all of the women were gathered near the room where the crew had been left. The thermometer was only fifty degrees, even then, and they shivered in heavy coats.

Every dome man was stretched out on the floor! As Dick stepped within, his heart almost stopped beating—but they were only unconscious! His breath escaped in a long sigh, after holding it for almost a minute.

Brown and Martin were trying to revive the prone forms. The control men lay beside the others, brought there by the two earthmen. The eyes of first one then another, slowly opened, and they looked around in amazement. Cold affected them like an anaesthetic, causing complete unconsciousness.

When the ship reached normal warmth, they felt as good as ever. It hadn't been cold enough to freeze them, in their section, and not a man was injured. When they understood what happened, the men hurried back to the controls.

THE heavy coils were soon fastened around the tube, and it was filled through a valve on the upper side. A gauge was set to register the pressure of the vapor within. They decided to raise steam pressure enough to equal the compression of the fuel.

It required fifteen minutes for the

water to reach the boiling point, while they nervously held their watches. They could keep track of minutes and hours, although there was no longer day and night in their lives. According to their figures, they now ate dinner at three o'clock in the morning, and went to bed in the early afternoon.

They held their breath when the steam valve was opened. It moved slowly under Dick's fingers, while a thousand questions raced through every mind.

"Would it silence the blasts? Would it put them out of commission permanently? Was that moment, and the turning of that valve, the end of existence for them all?"

Dick glanced at the gauge on the tube, then jerked the valve shut. The pressure was still far below that of the fuel. He turned the heating unit on full, and watched the gauge climb higher. They didn't understand the numerals of the domed cities, but knew the pressure was getting terrifically high.

When he opened the valve again, the steam gauge *did not rise!* It held almost steady. The hiss of escaping steam, sounded through the heavy metal faintly.

The tubes began to fire spasmodically! Dick bit his lips, as he opened the valve a little wider. John McCarthy wiped the sweat from his forehead, as every face turned white as chalk.

They fired evenly again!!! The steam was working through the mixture—*discharging through the blasts!*

They felt their bodies sway under the effects of acceleration and exultance filled them. There was *some* reaction, at least!

Morquill appeared on the ramp, his face lighted by a smile. "*What have you done? The ship is traveling at almost twice the speed that it was before!*

Is it all right?"

Dick sat down hard. Not a man in the crowd was able to answer. Success had left them speechless. Barrow was the first to recover his voice.

"Are you *sure*?"

"Yes, Dick! We took three separate observations, and each shows the same result—almost *double* normal speed! Does it mean what you wanted? *Can we reach the domes?*"

"I hope so, Morquil. If the steam has made *that* much difference, we'll get there without trouble. The water must be conserved as much as possible—and hope that it lasts. Whether it increases the power of the fuel, or simply creates an additional body to drive against, is not important. *We're getting there!*"

CHAPTER VI

Jupiter and Trouble!

THE huge ship circled the planet twice, with the instruments adjusted to detect the metal of the domes. They spread over many miles of the surface, yet were like grains of sand on the enormous globe. When the gauges quivered over a section, hidden beneath the mists, every one breathed a sigh of relief.

It would be many hours before the ship was within the cities, but they were *home!* Every earthman had the same feeling. Jupiter was almost as much of a home to them as to the natives, even before they had seen it. They eagerly looked forward to sight of the domes that would be under their care.

John McCarthy entered the control room with a big tray of containers. "Here! It's not liquor, but I'll bet you enjoy it more. There's enough in each of these to *really* quench your thirst. I for one, will enjoy drinking all of the water I want, after five weeks on short rations."

It seemed impossible that the clouds

outside could be deadly. They were beautiful in the reflected light of the sun, yet those vapors contained poison that no man could live in. The domes were the only place that life could exist on the strange planet.

As they dropped through the heavy mists, it created a feeling of dense fog. They could see nothing of the surroundings, trusting entirely on the instruments. It was like groping in the dark, yet the earthmen knew it had been done before, and the dome-men showed no fear.

When a slight jar shook the ship, they breathed easier. *It had touched the ground!* They could feel some effect of the heavy gravity, even within the insulated hull. The ship slanted down at a steep angle, sliding forward with its own weight.

The earthmen didn't understand what was happening, but watched the actions of the dome men. They were using a different control board now, beneath the other panel. McCarthy was down in the hold, watching the action of machines that had been idle until now.

When they stopped, the mists disappeared from around them. Lights above outlined a huge metal passage. The ship started forward again and heavy doors slid back at the approach with bright light appearing beyond.

They were looking across sunlit country; the most perfect scene they had ever witnessed. Strange trees, and growth of every description, spread in every direction. When the ship slid in to the open, they were beneath one of the domes—enormous beyond their greatest imagination, and exquisitely beautiful.

While they watched spellbound, people started across the fields to greet the expedition. The women were well proportioned, and far different from the

men of the race. Not as tall as the women of earth, or quite as well built, but their heads were much smaller than the men's.

All men were dressed in flowing robes, the women in much less clothing. They wore tight fitting garments, like bathing suits of metallic cloth. They were happy and carefree, seemingly without a worry in their lives. Children came romping across the fields beside their parents.

Minutes slipped by, and the people from earth hadn't moved. Sight of their new home was too wonderful to grasp at once. Instead of the gloomy metal covering they had expected, the curved surface above was finished in blue that resembled clear sky at home—as if they had reached the land of their dreams.

WHEN their minds snapped back to reality, the dome men were being welcomed by friends and relatives. The babble of voices came faintly to the control room, from the power hull.

John McCarthy joined them. When the machines stopped, he came up to find the reason. Now the others watched as he gazed at the beautiful scene for the first time. Their own amazement was reflected in his eyes. When he looked up at the curved dome, his wife slipped her arm around him.

They were disturbed by the crew, returning with their friends to welcome the engineers. The dome people seemed completely happy. They were like children greeting their parents, holding the hands of the earth people and gazing into their faces with adoration. In their minds, the future was secure, and they no longer had a care in the world. Eileen McCarthy was so overwhelmed at the reception that she hugged two of the little women.

It was like a dream to walk across

the heavy carpet of moss. There was no grass, but the velvet coat of green was quite similar. The trees were shaped like an inverted bowl, their branches conforming to the curve of the dome above. They were smaller than the trees of earth, with very large leaves.

The eyes of the earth people kept returning to the dome. It was hard to believe that it was not blue sky, except for giant supports that reached from the ground to the metal ceiling, hundreds of feet above.

When Peter Yarbro learned that he was in charge of this agricultural dome, his pleasure knew no bounds. His wife couldn't wait to see the home that had been prepared for them—and waiting almost twenty years.

A circle of buildings formed the foundation of the immense metal ceiling, as well as housing thousands of inhabitants. The back walls of the structures were always blank, toward the vapor beyond the miniature civilization. Each city was a world of its own, with a curved horizon at the top of the buildings.

In Yarbro's dome there were few means of travel, as every inch of soil was cultivated. The dome dwellers were past masters at farming, and loved this work more than any other type of labor. To them, it was a pleasure that vied with amusement machines of other cities.

When Mrs. Yarbro entered her new apartment, thirty stories above the ground, and stepped to one of the balconies, the view was superb. She was not interested in the next dome, but wanted to settle her own domain as soon as possible; completely happy.

The rest of the party entered an open car, mounted on a single track, and started for the next city. Every object that moved was operated by the control

of gravity, and could develop enormous speed and power. It rolled swiftly across the open ground, to enter a tunnel three hundred feet wide, which carried all of the commerce between the cities. When it emerged in the next dome, the imitation sky was the same, but only a small portion of the ground surface was cultivated.

Small buildings dotted the level floor, which Morquil explained were the entrances of the mines, unworked for many years. Jerold Brown and his wife remained in this city, in an apartment as well situated as that of the Yarbro's, in the first dome.

Hours passed as they moved from city to city. When they reached the capitol, only the Barrows, McCarthys and Martins remained of the original fourteen. The others were in their own domes, settling down to the new existence.

Every occupation seemed to have been forgotten by the childish people, to come and welcome the beings from another planet. They lined every inch of the way, many deep.

The main dome was three times the size of the others. Supporting pillars, one hundred feet in diameter, seemed vague where they touched the ceiling above. Parks covered most of the ground, dotted here and there by amusement buildings and theaters.

Cars whizzed back and forth, as people gathered to see the strangers. For the first time in generations the amusement buildings were deserted. Since their arrival, Dick had seen no sign of work, and finally questioned Morquil.

"The people work one mig out of each lix, Dick. It is enough to carry on cultivation of the crops, and keep the amusement buildings running properly."

Barrow was stunned. The working period would have to be increased to

three immediately, then four and five. They seemed to think that bringing men from another world would do the work, and were apt to be disappointed when he started issuing orders.

WHEN Dick and his wife were installed in their new home, and the McCarthys settled in a nearby apartment, Morquil hesitated. The Martins were anxious to see their own habitation, and looked at the dome man questioningly.

He finally spoke with hesitation. "I have bad news for you. The Martins will have to occupy an apartment in this city for a while. Their dome is out of order. Trouble developed soon after the ship left here, on this trip, and over a thousand people were killed. Every other city is overcrowded with refugees.

"It started with a strange banging on top of the dome, which kept increasing. No one knew what the trouble was or how to stop it, so they waited to see what happened. It didn't sound as if the ceiling was going to fall—but as if the banging came from *outside*! It was several migs before they knew the cause.

"When a large section crashed to the ground, it was a complete surprise, and caught the inhabitants unprepared. Soon the air was mixing with the poison gases from outside. People tried to escape, and most of them did. All except those that fell unconscious from the gas.

"Before the last of them reached the tunnel, green things dropped to the ground, and started after those who remained. They had to close the doors between the cities to keep the creatures from entering this dome. It is the first time that anything has happened to my people, and we don't know what it could be."

For a long time the earthmen re-

mained silent. The troubles of this civilization had been dumped into their laps already—in the form of a terrible calamity. It sounded *almost* as if some kind of life forms had broken through the domes *from the outside!* Perhaps there was more danger than could be imagined. One dome had been injured, if not destroyed, and others might follow!

A meeting of the earthmen was called immediately, much to their surprise. Dick dared not let conditions stay as they were, for fear of future trouble. Action must be taken at once.

"We don't know what we're facing, but the fate of the race as well as our own lives, seem to be in danger. The break in the dome might have been accident, and the moving forms the imagination of fear. But we know that over a thousand people were killed—what-ever caused the trouble!"

The men went back to their domes to rest, and plan some means of entering the deserted city, but were disturbed before they had time for sleep.

The agricultural dome had been attacked! The pounding had begun within a short time of their arrival.

One thing was certain, the injured dome had been *attacked!* It was not accident that the metal ceiling fell. *There were living beings in the gases outside their civilization!*

The first dome had been attacked just after the space ship left for the earth, and this attack came just after its return to the domes. There was little doubt that movement of the ship had disturbed the serenity of existence. Perhaps the gas creatures hadn't known what was beneath the metal hives until the ship appeared.

The hanging on the agricultural dome, *had to be stopped!* A hole would let in the gas! Rifles, that had been brought back on the ship as curiosities,

were given to each earthman. They loaded them carefully while they searched for some means of reaching the trouble.

When the leader of the dome heard what they were planning, he showed them sealed openings to a space between sections of metal, which hadn't been used since the city was built. The dome was constructed in three layers, for insulation, and to give added protection. It was like a maze, to work their way toward the pounding through the network of struts. At times they had to crawl on their hands and knees, at others there were clearly defined passages.

They were afraid, and not ashamed to show it. They were hunting creatures which they knew nothing about—didn't even know whether bullets would affect them! They might face thinking beings, or forms of life that only wanted to search in the domes for food. It was not a pleasant thought.

Every rifle was cocked as they neared the source of the pounding. Every nerve drawn to the finest point.

Suddenly Dick stopped. He was ahead of the others and first to glimpse what they faced. He motioned to use the oxygen masks, as he fastened his own in place.

As they crept closer, light glinted on the giant pointed hammer, operated from beyond the outer layer of metal. It rose and fell at even intervals through the rent in the upper surface. The ram had already crushed through two thicknesses of metal, and was battering at the inner layer.

The inside section was more like glass than metal and dim light passed through, but the outer layers were opaque. When the huge ram disappeared from the glow of light it left a gaping hole where it had been. It was of material they had never seen and

glistened with a brownish hue. It appeared to shorten and expand in diameter, each time it struck the surface.

For a moment they hesitated, trying to decide the best means of attack. Whatever animated the ram was above their vision, and they had to be close to the opening to see it.

Each time the shiny object descended, the dome vibrated beneath their feet. As long as the vibration remained they were safe, but when it felt like a thud—the metal would be cracking!

Thousands of helpless people were depending on the action of earthmen, for their future existence. They seemed to think that it was only necessary to tell their troubles to these amazing strangers, to have them solved. Stories about the use of water to drive the spaceship, had circulated throughout the cities, crediting the newcomers with superhuman powers.

As the little party crept nearer, they separated, to approach the opening from every direction. Dick was to fire first—if he saw anything to shoot at! It might be a powerful machine, clamped to the outer surface, instead of a being that could be injured. The glass globes of the masks were clouding with moisture, and it was hard to see.

A thud came, that didn't vibrate quite as much, and the men could feel the hair on their necks stiffen. It was now or never, and Dick fired although he was still several feet from the opening. He fired at the topmost section of the ram, hoping that it might stop the hammering for a moment even if it didn't injure the equipment. Two more shots rang out, before the object could deliver another blow.

It was alive! The heavy ram jumped from the shock of the bullets, curving convulsively to one side of the opening. Then it drew back out of sight.

CHAPTER VII

Battle with a Monster

MINUTES passed, while the earthmen hardly dared breathe. Their heart beats seemed to almost echo in their breasts. Then the object appeared at the opening, hesitated, and was thrust in!

The hammer was a head!!! It swayed back and forth, like the head of a huge caterpillar, and every gun fired in unison. Shot after shot pumped into the head.

The giant head moved from one side to the other, while two gigantic eyes peered around. It didn't know enough to draw back from the danger zone, but muscular reaction finally moved it out of sight.

Dick crept forward, motioning for the others to wait until he investigated. There was no need for all of them to enter the danger zone.

He turned the flashlight on, that had been strapped to his waist, and played it around the jagged opening, then climbed to the next level and searched again.

When he crawled to the outer surface, the creature was writhing a few feet away. He motioned, and the other men soon joined him, where they could watch the creature.

They were standing almost on the direct center of the dome, where it was almost flat. The flashlights penetrated the mists enough to mark out the shape of the attacker, when they were all centered.

Suddenly they felt sick to their stomachs.

It was a caterpillar! As loathsome a creature as they could have imagined with its curled body, and the farthest possible thing from a human being. A form of life that existed in the poison

gases, where men would die within minutes. The muscles of the creature had to be terrifically strong, to move against the gravity of the huge globe.

Even at the center of the dome, they felt less effect of the neutralized gravity of the interior. It required effort to stand on their feet. Some effect of the neutralizers in the giant pillars, which eliminated most of the weight of the dome, enabled them to handle their bodies.

The creature before them was accustomed to normal gravity of the heavy planet, and even the metal of the dome was not beyond the pounding of its hammer. What they had mistaken for a battering ram, was the brown tip of the mammoth insect. From end to end it measured over sixty feet. The men finally turned away in disgust, as it writhed in muscular reaction.

John McCarthy was climbing into the opening behind the other men, when he happened to glance back. His flashlight dimly lighted the spot where the monster had been, and *it was gone!*

He hesitated with one foot in the air, then realized what had happened. The movement of the body had moved it farther and farther from the center of the dome. It had reached a place where the curve was sufficient to let it slide on the smooth metal. A moment later, a slight jar was felt through the entire structure—it had slid from the man made mound, to crash on the ground below. Memory of that sight made a sober return to the interior.

Before they dared rest, metal sheets were carried to the opening and blocked in place. Then dome men welded them to the solid metal. They didn't want to see any of those creatures in the cities!

Twelve hours had passed by the time the opening was sealed, and the earthmen dragged their tired forms through the maze of supports for the last time.

They were almost asleep before they could reach their own apartments, and tumble onto comfortable beds. They had conquered the first problem.

Dick was awakened by an excited man, talking faster than he could understand the new language. When he grasped what the other was saying, he leaped from bed wide awake.

Every dome had been attacked!!! The caterpillars were pounding many spots on each one. They seemed to be trying to get at the creatures that had destroyed one of their number.

IN that moment Dick felt like an old man. He thought of the space ship; the only way of attacking from the outside, and gave that up. There wasn't enough fuel to handle it, and the blasts might injure the metal domes. His mind searched frantically for some way of fighting *all* of the creatures—and knew it couldn't be done.

He was racing across the open ground, while thousands of people gazed at the hanging overhead. Suddenly he stopped, then turned back toward his apartment, running just as hard. There was a system of communication between the domes—that *sometimes* worked! It was not efficient, but if he could get in touch with the others immediately, there was *one* chance!

He tried frantically to get a connection, but it wasn't until one of the natives helped with the intricate system of signals, that he heard the voice of Andrew Smith. A few moments later Phillip Jones answered, then Jerold Brown and Peter Yarbrow. Each man was given quick, yet explicit, instruction.

When Dick turned away from the phone, John McCarthy entered the room, followed by George Martin. The noise in the city had finally aroused them from their slumber.

John started to smile, but the expression on Barrow's face drove all thought of greeting away.

"*What is it?* I thought the people were doing a day's work—but you——!!!" His face turned ashen as he ran to the balcony, George Martin only a step behind after gazing up for a moment, McCarthy turned slowly to face Dick.

"The worms? It sounds like *hundreds of them!* We better work fast, or they'll have the whole roof down around our ears."

"No, John. We can't fight them with guns. *They have attacked every dome on the planet!*"

When full realization came to the big Irishman, he sank slowly into a chair. "Then what? Have you got any plan—or are we helpless?"

"We've got work to do and plenty of it. There's a slight chance of saving the cities. I've already instructed the others."

As the three men raced toward the power plant, Dick explained. John and George were to do the work, while he traveled from dome to dome to make sure the people were prepared, and see that the power plants were used as he intended.

By the time they reached the entrance of the building, John nodded, and Barrow turned back as the other men entered the door. The first dome people that Dick saw were told to remove every one from the buildings, and gather them in the open spaces of the parks. *Leaving no one within any structure!*

The expression on his face scared them even more than the pounding of the worms, and they hurried to obey.

Dick jumped into the nearest ground car. He couldn't be bothered traveling on the railroads. This happened to belong to the assistant head of the dome,

whom he dispossessed. It jerked crazily across streets and parks, while he learned to handle the controls.

An hour later Dick was back at the powerhouse in the big dome. Every city was ready. In several places the hammering heads had broken through the outer layers, and were banging at the translucent inner ceiling. The creatures *had learned how* to break through.

The first worm that attacked, while the space ship was away, either took its time or didn't realize what was beneath the heavy metal. These creatures were working in earnest.

Heavy insulated cables ran from the powerhouse to the nearest metal pillars, where McCarthy and Martin were working desperately to fasten them in place. The booming voice of the Irishman had kept the natives back, although they crowded as close as they dared. They were really afraid, when the hammering grew plainer with each passing minute.

When the cables were fastened, John shouted to Dick, who was waiting in the powerhouse. He pulled a heavy switch, at the end of the wires.

The city was suddenly in complete darkness, then it flashed bright again as power flowed back into the thousands of coils in the ceiling material. Twice more it darkened, when the giant switch was thrown, and the lights came on again. This time it stayed bright.

Dick ran to the doorway, and gazed at dome above. *It was silent!* The people were frightened, and moved restlessly about. Twice more he turned the power into the metal, and after one long darkened period, the city remained bright. *No sound came from the dome!* Either the worms were dead—or frightened away!

Within a week the doors to the deserted city were opened, and the earthmen passed through. When they

glimpsed the interior, they stopped in consternation, then started to laugh.

Huge worms covered the ground, and smaller editions of the same species, crawled around them. *They were using the dome for a hatching place!*

They had only entered it to bring forth their young! It was not brains that tempted them to attack the city, but the instinct to find a protected place for their eggs. Since they had broken in, many of the young had hatched, and were crawling around the ground.

Sight of the earthmen seemed to excite their feelings, and several of the creatures started toward them. The men fired carefully, and the forms squirmed on the ground. The ones that came behind stopped, and some of the young tried to feed on the remains of their companions.

The sight was so sickening that the earthmen fired at every living thing they could see. Several of the wounded creatures crawled up the huge pillars, to disappear through the opening above, while the men shot at their disappearing forms. When the last caterpillar lay dead it appeared like a battle-field.

Three days later the gas had been expelled, and the hole in the dome repaired. The population was returning to their homes, burying the carcasses in the fields. The city was livable again, and they knew electric current would stop any future attack of the strange creatures.

TEN years later, Dick Barrow sat on the balcony before his apartment. His son John, eight years old, was playing with Dick McCarthy. While he watched the boys, his mind swung back to the earth the little group had left so many years before.

For three years they had talked of returning to their home planet, and the

evening before the conversation reached a climax. They were starting in two months.

It no longer required years to manufacture fuel for one trip. All machinery was working at top efficiency, and they could turn out enough of the liquid in a month, to drive the ship back and forth several times. Crews of workmen had been trained to care for all mechanical equipment, and there was no longer need for the engineers from the earth.

The day the little party (it now consisted of eighteen with the four children), entered the space ship tears rolled down the cheeks of many of the crowd. The dome people had learned to almost worship these members of an alien race, and thought they would never leave. But when they realized that their leaders were dissatisfied, and wanted to return to their native planet, they aided in every way.

The ship was out of port for less than a week when the people became restless. They hardly spoke, even at meal time, and for the first time in ten years there were petty quarrels.

When Barrow called them to the main cabin, they came grudgingly, then slowly the expressions changed. Smiles appeared on their faces, and their heads moved with sheepish nods of assent.

"We're fools, and you all know it. We were happy in the domes, happier than we ever were in our lives before. We didn't appreciate it and longed to return to the earth. We wanted to leave, yet had everything there to live for. We had comfort, every pleasure, and more friends than we can possibly have on our own world. *I feel ashamed!*"

"Right now we *wish* that we were back in our own apartments, and might as well admit it. The earth is not what we want, *we want the domes!*"

They are home!!!

"The best thing for us to do, now that we are on the way to the earth, is establish commerce. We can create friendship between the planets, but we are natives of Jupiter! Our interests will always be with the dome people. We have almost become part of that race, and they have given us everything in return. They even gave us our freedom when we wanted it. *We belong there!*"

TEN years more passed, and John Barrow was beginning to help with his father's work. Vacationing in Jupiter's domes had become so popular on the earth that they were building another city to accommodate the tourist trade. It was the third to be added to the original six. Merchant ships were constantly discharging goods from the earth, and carrying back rare metals.

Space ships from the earth, designed after the original Jupiter ship, were searching the little known planets for minerals. Domes were being built on three of the smaller globes, and pio-

neering humans migrated to new worlds. There was danger, yes, but also fame and fortune for the hardy people who would inhabit them.

The earth had changed a lot, since the visit of the space ship. They had adopted the principle of controlling gravity, and tremendous structures were the result. New buildings were several times as large as the greatest structure of ten years before. Both planets had benefited from the friendship, and both were happier as a result.

As Dick Barrow's mind ran over these facts, he smiled and spoke aloud to himself. "And all of this in twenty years—it seems incredible!"

"What did you say, dear?" asked Dolores.

Dick smiled as he glanced at her. "It's nothing. I was just thinking. Remember the night you fell in front of my table in the hotel? And I thought it was accidental—you scheming gold-digger!"

The ruler of the domes ducked when his wife threw her book—but she didn't throw it very hard.

THE END

WORLD'S LARGEST REFRACTOR?

It is claimed that the Yerkes 40-inch refractor is the largest telescope of that type in the world. However, this should be modified to the statement that it is the largest of its type in use. Two 49-inch objectives were built in France for the World's Fair in Paris, and were found worthless for actual observation and were never installed in an observatory. These lenses were offered for sale and it is expected that they can be reduced in size and refocused to give satisfactory images.



WHAT HAPPENED TO CROSS-PATCH?

Folks call him "Smiles" since he discovered those keen Star Single-edge Blades. His tender skin is now happy. His lion whiskers march off like a lamb. Famous since 1880, there are 4 sharp Stars in every 10¢ package. Star Blade Division, Brooklyn, N. Y.



STAR SINGLE-EDGE
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Mr. Craddock's
**AMAZING
EXPERIENCE**



By WILLIAM F. TEMPLE

Panic gripped Mr. Craddock as the hours repeated themselves. Then, learning the incredible truth, he sought a means to use them to his own advantage

CHAPTER I

The Uncanny Bus Ride

THE bus went swishing through the night, little fountains of rain water spurting from under its tires.

Mr. Craddock rubbed the sleeve of his overcoat against the misty window beside him and peered through the smeary patch of comparative transparency which he thus created.

It was very dark outside, and all he could see was the shining wet sidewalk sliding by, edged on the far side with the faintly gleaming spokes of iron railings, and beyond that the black blur of houses. It was not enough to tell him just what part of Cranston High Road he was passing, and he waited impatiently for the bus to reach a recognizable landmark to discover where he was.

Presently a large red neon sign came floating along through the darkness, and Mr. Craddock scanned it.

A. P. BURSLEM & SON

Mr. Craddock reflected. "Let me see now, that's the shoe shop. My road is the next turning but two. I'll start to get off when I see Flaxman's, the baker's, sign."

Mr. Craddock was a very methodical man, or, as his late wife had often put it, he "always wanted everything just so." He always tried to stop the bus exactly at the corner of his road, so that he had a minimum of walking to do. He particularly wanted to accomplish this tonight, for the rain was simply teeming down.

He kept a keen lookout for Flaxman's, and presently saw the red glow of another neon sign ahead.



The moment he landed amid weird blue flashes, life became a slow-motion film

"There's Flaxman's," he thought.

As the bus drew level with the sign, he cast a perfunctory glance at it as he was rising from his seat, and next moment flopped back again, the most surprised man in Cranston.

For the sign read as plainly as could be:

A. P. BURSLEM & SON

As we have said, Mr. Craddock was a methodical man, and as soon as he had recovered from his initial surprise he set methodically to work to find a logical explanation.

He thought of three:

1. The bus-driver had mistaken his route and gone round in a circle.
2. The whiskey at the "Grayhound" was extraordinarily potent.
3. He (Mr. Craddock) had been mistaken.

The latter was perhaps the most probable, yet he could have sworn that the first shop sign had been Burslem's.

And then the true explanation struck him. Why, of course, Burslem's must have opened another branch! How stupid of him not to have thought of that! Then this next neon sign they were approaching must be Flaxman's.

But it wasn't.

The astounded Mr. Craddock read for the third time:

A. P. BURSLEM & SON

It was a dazed and somewhat frightened little man who scrambled from his seat and dropped off the bus.

HE found he had alighted too soon, and had some distance to walk. As he trudged along, hat brim down and coat collar up against the pelting rain, his mind was whirling with thoughts of his peculiar experience, though he stopped when he came to Flaxman's, the baker's shop, to assure himself that it at least was in its rightful place.

His apartment was just around the

next corner, and soon he was mounting the steps to the front door, reaching automatically for his key. He let himself in, closed the door behind him, and began climbing the stairs to his tiny flat on the top floor—the only rooms in the house that were tenanted at the time.

He was still deep in his thoughts and taking little heed of his surroundings, but presently he could not help noticing that the stairs felt unusually hard to his feet, as though the carpet had been removed.

"What the dev—" began Mr. Craddock glancing down, and then stood transfixed, his heart thumping wildly.

For the stairs were of stone, and streaming wet. He was once again mounting the steps to the front door!

Picture him standing there, a rotund little figure in an overcoat that fitted none too well, a felt hat rendered shapeless by the rain, and a cheap scarf of frightful hue. His very ordinary features were dominated at the moment by bulging blue eyes which mirrored his mixed feelings of bewilderment and fright. He was trembling rather badly, too. This sudden reverting of things, this recurring experience of being shunted helplessly back by some unknown Power, had come into his quiet, well-ordered life with something of the shock of a bombshell.

Mr. Craddock loved peace and security. He liked to know where he stood. His day was always methodically arranged. He rose at 7:30, caught the 8:22 train to his office, went to lunch at noon, caught the 5:20 home, went to bed on the stroke of 10:30. He'd done that for years with hardly a variation.

And now—this.

One moment he was climbing the stairs exactly as he had done a thousand times before, and the next he was back in the street without knowing in the least how he got there. To put it mildly,

it was darned uncanny.

A sudden gust of wind drove a hundred stinging raindrops into his face, and he shivered and reached again for his key—and discovered that somehow it was already back in his hand.

But still he hesitated. No, he couldn't face those stairs again. He would go round and up the back staircase. And so by this devious route he reached his bedroom and slammed the door behind him.

CHAPTER II

Safe at Home

PRESENTLY, after he had removed his wet things, gulped a peg of brandy, and poked a nearly dead fire into a glow, he felt somewhat easier and sat down in his armchair with a pipe. He reclined there puffing jerkily, staring up at the clock on the mantel and reflecting on the strange events of the evening.

"It certainly had me scared," he mused. "I'm not sure now that it wasn't that whiskey after all. Think the best thing to do is to go to bed and try to forget it. I'll feel better in the morning."

It had just gone half after ten, his usual bed-time, and so he arose, knocked out his pipe against the fire-place, and began undressing.

All the time he was doing this he tried to think of other things, of ordinary commonplace things; of that money he had to come from the bookmaker; the film he had seen at the Star Cinema yesterday; the new tobacco he was trying. . . .

But it was no use. At the back of his mind, yet persistent and dominating, was the question: "What in heaven's name happened to me tonight?"

Long after he was in bed the query reiterated itself maddeningly, until at

last, unable to bear it any longer, he sat up and shouted into the darkness as if at some watching entity.

"I don't care who or what it was—I'm not afraid! And I'm not going to worry myself any longer. I'm going to sleep."

Defiantly he flung himself back, pulled the bed-clothes up to his chin, and strove to make his mind a complete blank, a method of getting to sleep he often used.

In a measure he succeeded. He sank into a doze, half aware that he was still in bed, yet at the same time wandering through a queerly distorted version of recent events.

Here he was leaving the bar of the "Grayhound" and waving good-night to Charlie—or was it Bill? But no matter, for the "Grayhound" went sliding rapidly away to one side, shrinking as it went until it became a mere doll's house far behind.

And he was riding along Cranston High Road in the bus. There in front was the red glow of Burslem's sign; but as he approached he saw that it was really the glow of a fire, and leaned forward to stir it up with the poker in his hand. At that moment, however, the fire exploded, disintegrating in a shower of flying embers.

Mr. Craddock felt himself being lifted by the force of the explosion. For a space he whirled dizzily in nothingness; then came a sickening sensation of falling. He landed with a frightful jar in a sitting position, a great white light blinding and dazzling his eyes.

He blinked at the glare, gave a terrific involuntary yawn, and then came back with a rush to full consciousness.

The dazzling white light was the room lamp, which was full on. He was not holding a poker, but his pipe. He was sitting again in his chair before the fire. And the clock on the mantel

get to Burslem's.

"As you remain in the bus, you are doing exactly what you did before, and so traverse the same Life-line as before. Twice more you pass Burslem's and are flung back by the Fifth Dimension, until you change the course of your life by getting off the bus at point C. Proceeding along this fresh Life-line you reach the door-steps at point D, but unfortunately come up against the Dimension at point E and are flung back to D.

"This time, however, you change the course of your life straight away by going round the back stairs, and so branch out in this direction. Still, you haven't changed it sufficiently. At point H you are sitting in the chair; at point J you are in bed, and after you have crossed a narrow strip of Time you meet the Fifth Dimension again, and wake up to find yourself back at point H, in the chair. You change direction again by remaining in the chair instead of going back to bed, and so far along this new Life-line you haven't met with obstruction. Are you any clearer now?"

"Well, I've got the general idea, I think," said Mr. Craddock dubiously. "But why do I have to move along this Life-line, anyway? Can't I stop still?"

"You will when you die," rejoined the doctor grimly. "The propelling force driving you along your Life-line is your *mind*. It is like the engine of a car: the faster it works, the faster you go, and *vice versa*. After all, Time is purely relative, you know—it is only what you *think* it is. For instance, if you are waiting for the doctor to come to the succor of a friend who might die at any moment, the time waited may measure only an hour by the clock, but to you it seems like several hours. Again, you might go to sleep, and sleep soundly for seven or eight hours, but when you wake up it seems as if it were

only a few minutes ago you got into bed."

"I suppose in the first case—" began Mr. Craddock, but the doctor took him up.

"In the first case your mind was working quickly with anxiety, almost feverishly, and so actually carried you across those apparently illusory hours of Time. In the second case your mind was at rest, and you remained practically stationary in Time. And whilst on the subject of your mind, one part of it—the memory—receives a definite impression from the Life-line as it passes along it, so that after one of your peculiar return trips your memory still retains the impression of the Life-line which in fact lies ahead."

"I see that," said Mr. Craddock after a pause. "But then there's this Fifth Dimension. What does it look like? Why can't I see it?"

"Because it's something absolutely outside of human perception. We can't even begin to imagine what it looks like, no more than 'Flatlanders'—hypothetical people living in a flat plane of only two dimensions, Length and Breadth—could imagine what the Third Dimension, Thickness, looks like. It's beyond our three-dimensional senses—four-dimensional, if you include Time—to comprehend it."

"It's all very well," muttered Mr. Craddock, tugging nervously at his moustache, "but, assuming that this sort of thing keeps on happening, how is it going to affect my life?"

Dr. Chalmers reflected.

"Well, it more or less gives you a second chance each time," he said. "And it will in a way lengthen your life, for instead of proceeding in one direct line across Time, you will take a tortuous, and therefore longer, course. You must let me know how you get on. Yours is a most interesting case."

CHAPTER IV

The Street Called Straight

MR. CRADDOCK found it both interesting and trying during the next few weeks.

There was that time, for instance, when he stood in a line for an hour to get into the cheap seats of the Star Cinema, and just when he reached the box office he suddenly found himself back at the end of the line again. Gloomily he had resigned himself to wait the hour over again when it occurred to him that he was doing just what he had done before, and was therefore traveling over the same Life-line.

"Got to change direction," he muttered to himself, and went to another cinema instead.

There were occasional compensations however.

Feeling unusually hungry one evening, he went to the best restaurant in Cranston and had a real feed. He was something of an epicure, and enjoyed to the full every one of the seven courses. And when the waitress handed him his check it gave a little quiver like something in *Alice in Wonderland* and changed into the menu she had handed him before he ordered the dinner.

Of course his hunger had returned too, but then he had the pleasure of eating two dinners. The second was entirely different from the first. (Mr. Craddock was getting experienced in the art of changing direction.)

There were several little affairs of this nature, until one day Mr. Craddock had a great idea.

Could not this affliction of his be turned to some account? Surely it had money-making possibilities?

He sat down to think the thing out. But he was a man of limited horizons, and apart from stocks and shares (of

which he knew nothing) he could think only of his main interest, horse racing.

So off he went to the race course one day with most of his savings in his pocket and high hope in his heart. He did not bet on the one o'clock race, but carefully noted the winner. In the same way he made mental notes of the second, third, and fourth race results.

By the time the fifth race started he was beginning to feel a little anxious. Would he never strike that Fifth Dimension again?

"Just when I want it, it won't come," he muttered savagely. "And here I am with all today's winners in my pocket. Such lovely odds, too. Oh, to be back at one o'clock!"

The fifth race finished—"Goosecherry Bush" at 100 to 8.

Mr. Craddock groaned.

"Matches, sir?" queried a hoarse voice in his ear.

"No!" snapped Mr. Craddock.

The old match-seller, in retreating, stumbled over his own feet and sent the contents of his tray flying.

"Clumsy devil!" thought Mr. Craddock peevishly, watching the old man groveling for his scattered stock, and then turned his attention to the 3:30, the last race of the day.

A quarter of an hour later "Diplodocus" romped home at 33 to 1.

"Oh, well," thought Mr. Craddock, turning away, "there's another day's racing tomorrow. . . ."

"Matches, sir?"

"No!" said Mr. Craddock almost fiercely.

The same old match-seller went shuffling away, stumbled, and sent his boxes cascading to the ground.

The coincidence gave Mr. Craddock sudden pause. Strange, that happening twice! Strange, too, that one particular match-box over there should fall and remain poised on one corner just

as it did before. . . .

Abruptly he jerked out his watch.

3:20.

Good God! He had hit the Dimension after all!

He had not been shunted back so far as he would have wished. But there was still time to clean up on that last race—"Diplodocus" at 33 to 1. He had ten minutes to lay his bet. Feverishly he dashed for the mutuels.

"Two hundred and eighty dollars to win on Diplodocus," he said, passing the bills over with a slightly trembling hand.

The man in charge jovially approved his selection, and gave Mr. Craddock a voucher. That worthy crammed it in his pocket, and paced fretfully up and down until the race began.

All happened exactly as before: Diplodocus won by three lengths at 33 to 1.

Mr. Craddock gave a sigh that denoted joy and relief. Then he hurried back and handed over his voucher.

His head was spinning with figures. How much was two hundred and eighty multiplied by thirty-three? Three eights were twenty-four, and three twos were six, plus two—

"Two hundred and eighty bucks," came the bookmaker's voice cutting across his thoughts. "Diplodocus to win, you said? A darn good pick, pal. Stands a fine chance."

Mr. Craddock's brain was numbed for a moment; then it began working fast.

Those bills were merely his two hundred and eighty dollars! Back again to the point when he was putting the money on! Oh, to hell with that Dimension! It was no use making his bet over again—not at this window at any rate. The Fifth Dimension barred his way.

"I've decided not to bet," he said gruffly, and snatched the money from the astounded man's hands.

As he dodged through the crowd he spied a bookmaker, one Sid Street, a tubby little man very like Mr. Craddock himself. This way might work better.

And presently he was back at the rails with Mr. Street's voucher in his pocket.

For the third time that afternoon he saw Diplodocus canter aloofly past the post exactly three lengths ahead of his nearest pursuer.

"And I hope it's the last time, too," he thought to himself as he made his way back to collect his winnings.

He tried to push his way through the crowd, but everyone else was apparently trying to do the same. As he surged helplessly to and fro, his ears caught sundry words and phrases voiced by the people around him.

"The fat little welsher!"

"... called straight—the liar!"

"If I lay my hands on that guy, I'll . . ."

It did not take a Sherlock Holmes to deduce what had happened. Mr. Street had packed up and gone—presumably up the "street called straight."

CHAPTER V

Into Danger

MR. CRADDOCK, still trying to swallow his own bitter pill, thought it best to be going. The crowd was getting too rough. Besides, he wanted peace to think over this new misadventure. Almost all his savings gone! He could scarcely credit it, even now.

He became aware that several people near him were staring at him peculiarly. He wondered why.

"That looks like the guy," said a pugnacious-looking man suspiciously.

Mr. Craddock went suddenly cold. He remembered that the bookmaker

very much resembled himself in appearance. Under the stare of a score of mistrustful eyes he walked away.

He was almost at the station before he realized he was being trailed. Four rough-looking men were following him at a never varying distance behind. They trooped into the depot after him and stood apart, eyeing him covertly.

For a moment Mr. Craddock forgot even his lost cash in this fresh threatening crisis. Anxiously, but with a fine outward appearance of unconcern, he began to stroll up and down, humming untunefully, contriving to edge farther away from the group without appearing to notice them.

Just as he thought he'd put a fair distance between himself and them, a hand caught his shoulder and swung him round.

The four men had walked quietly up behind him, and were standing there watching him grimly. The toughest member of the bunch kept his grip on Mr. Craddock's shoulder.

"Name of Street, ain't it?" he growled.

"N-no," stammered Mr. Craddock. "N-not me. My name's Craddock. I'm—"

"Can it!" snapped the man. "You wouldn't be so all-fired nervous if you wasn't our man. So you'd scam with our winnings, would you?"

A train came rumbling into the station, drowning Mr. Craddock's panic-stricken reply. The man growled again, and drew back a hamlike fist preparatory to smashing it into Mr. Craddock's face.

Mr. Craddock gave a yell, wrenched himself free with a sudden twist, turned and ran as fast as his short legs would carry him.

"Stop him, boys!" came a shout from behind him.

The train was almost half-way into

the station, and Mr. Craddock, with a wild idea of putting it between himself and his pursuers, tried to dash across the line. But his too hasty feet slipped on the rails. He fell awkwardly and heavily, twisting so that he landed with a jolt on his back across the way, in the very path of the oncoming train.

The moment he landed, life seemed to slacken speed enormously, to become the slowest of slow-motion films.

The train, which had entered the depot at a furious rate, was now standing almost still, a motionless cloud of white smoke perched like a bit of cottonwool on its funnel. To the side, Mr. Craddock glimpsed his four pursuers, an irregular group frozen in the act of running, each poised ridiculously on one foot.

The explanation of this flashed upon him. When death is imminent, one's whole life is supposed to pass rapidly before one's eyes. This did not happen to Mr. Craddock, but his brain became extraordinarily lucid and clear, and was racing at such a speed that by comparison the normal procedure of life seemed funereal. What was it Dr. Chalmers had said about the brain working quickly?

"... your mind—is like the engine of a car; the faster it works, the faster you go . . ."

Then he must be tearing along his life-line at a terrific speed. If he hit the Fifth Dimension now!

The locomotive had approached perceptibly. He could distinctly see the gleaming rim of the nearest wheel. He lay there watching its deathly slow approach, while yet his brain was sending a message through his nerves to his muscles telling them to get him out of this. But he knew he couldn't arise in time.

Nearer and nearer.

The whole front of the engine was looming over him. . . .

Then the whole scene was ripped asunder by a violent ribbon of light. It was as though a terrible thunderstorm had broken out without warning. Through vivid and incessant blue flashes he glimpsed the train, the depot, the figures of the four men becoming small and receding into the depths of a great black thundercloud. The cloud expanded rapidly, came whirling about him, engulfed him in sudden silence and utter darkness.

There was an indefinable sensation of flying bodilessly, which changed into a steady upward movement, a feeling of being borne up on something. He became aware of a faint and growing murmur of voices, an increasing glimmer of daylight, as if he were approaching the top of a long, dark elevator-shaft.

There was a strap around his waist binding him down to—what?

An operating table?

But no, that could not be. He was in the open air, staring up into a blue sunny sky.

He strove impotently to get erect. All his strength seemed to be drained out of him. He felt unnaturally feeble. . . .

EXTRACT from the *Morning Chronicle*, June 4th, 1891:

"Cranston, Monday.

"John Craddock, a nine-months' old

infant prodigy, astonished a distinguished gathering of medical men here tonight.

"This remarkable child is able to converse intelligently with any adult on everyday subjects, and although he has never been taught to read or write, he can do both perfectly.

"His father, Mr. James Craddock, is at loss to account for the phenomenon. Interviewed by our Special Correspondent, Mr. Craddock said: 'Our baby was perfectly normal until about two months ago. One day he was being wheeled in his perambulator by his nurse when he suddenly started to kick and jerk, as if in a fit. Alarmed, the nurse bent down to attempt to quieten him, when the child (which had never spoken intelligibly before) astounded her by exclaiming: "What the devil's happened now!"

"Since then John has displayed an intellect far beyond his years, and has made some remarkable prophecies, many of which have come true. I am also able to announce that he has been engaged by the Apex Music Hall Circuit to appear at their theaters this coming spring at a very large salary.' "

MR. CRADDOCK (*our* Mr. Craddock) had embarked very successfully on his new Life-line.

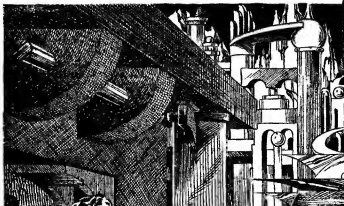
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By EANDO BINDER

CHAPTER I

The Mystery of the Valley

THEY stood at the crest of the long slope that led down and gazed into the valley of mystery. Towering walls of basalt hemmed it in on three sides. Only the narrow, sloping gorge at this end, boulder strewn, afforded a rough stairway by which to descend. It was almost as if nature had tried desperately to secrete this strange, misty mountain pocket from meddling man entirely.

A heavy bluish fog covered all of its floor and clung half way up the cliff faces. No single detail of the valley could be discerned through that curtain. What cryptic secrets lay behind it?

"Just gold," was young Tom Curwood's practicable attitude. That's

An uncanny
mystery lay beneath
the Blue Mist.....then
Allan Rand woke the
sleepers of the...

VALLEY OF



The last man tried to run back in screaming surrender. He, too, fell, a blackened corpse

all I came for, and that's all we'll find, of course." His square-chinned, deeply tanned face broke into an eager grimace at the thought of yellow metal.

His companion's eyes stared into the valley dreamily, moodily. Of about the same age, Allan Rand, academically a doctor of science, felt his pulses quicken, but not at the thought of treasure.

"I'm not so sure—" he said slowly. "My father—" He half turned.

"It is a place of witchcraft," their Castilian guide, Ramon, was murmuring, eyes oddly frightened. "Never before have I see such a mist that stop the sunlight. *Caramba!*" His nervous voice slanted into a stream of Spanish.

The guttural voice of their Indian helper, Queto, echoed from his side. "Valley of Lost Souls!" he grunted.

LOST SOULS

"No go in. My people no go in. Taboo!"

"Hear that?" said Allan Rand quickly.

"Legend and superstition!" scoffed Tom Curwood, his sharp confident laugh resounding from the opposing cliffs in amplified echoes. "Has there ever been treasure trove in out-of-way spots that wasn't laid on thick with old wives' tales?"

"Queer thing, the mist—but probably just some volcanic vapor that has seeped from fissures through the centuries. We're prepared for it. I wouldn't doubt there's plenty of skeletons down there, but certainly no ghosts. Time's flying, Doc. Let's get going."

He sprang into action. Allan Rand helped him slip the helmet of aluminum, rubber and glass over his stubby-haired skull, then attached the double hose from the compressed oxygen tank that rested in a leather harness on Curwood's back. It was a simple outfit, designed and built by Rand, assuring the wearer of an independent air supply for over three hours.

Armed with pistol and knife, a bandolier of ammunition around his waist, Tom Curwood paused for a final hand-shake, then turned. His six-foot three of hardened hody slowly wound its way down the slope, skirting boulders and picking the easiest course. He disappeared in the ultramarine fog.

Utter silence smote Rand. The two behind him made no slightest sound. The valley itself was as quiet as a tomb. Not even the chirp of an insect could be heard around them, as though the finger of death had withered every last inch of the valley.

Allan Rand waited tensely. Gold there might be down there, but what else lay beyond—in the depths of the blue mist?

Twenty-five years before, Allan Rand's father had come in possession of an old treasure-map, dating from the days of Balboa's explorations four centuries before. The ancient, crumbling document gave explicit directions for reaching the valley in the Cordillera Range of Honduras. The surviving member of a party of Spanish who had penetrated into the blue mist, had written the account and drawn the map. Obviously, he had reached the coast and had been picked up by the main expedition. Through what hands the treasure-map had then gone in the next four hundred years, how many others had sought the valley, drawn by its yellow lure, only the fates knew. But eventually it had turned up in an old urn the elder Rand had picked up in Mexico City.

He had promptly made an overland trip, with a safari of Hondurans and Indians, from San Lorenzo on the coast, despite the pleas of his wife against it.

He had not come back. Two years later a half-crazed Honduran returned to San Lorenzo, where the wife made inquiries, and told a horrible story of death for all except himself in the valley of blue mist. Allan did not hear the full story till he had completed his schooling and gained his academic degree, according to his father's wishes. Then his mother turned over to him the treasure-map and the last message from his father, scrawled apparently at the point of a strange, choking death.

"To my son, Allan," the already faded lines read, "when he's grown to manhood—if God grant that this message ever be delivered: I found the Valley of Blue Mist and its gold, but lingered to solve a strange secret it holds. It was my undoing. I cannot tell what I have seen—it is too unbelievable—but you, my son, must come here and with your scientific knowledge combat the Blue Mist and penetrate

into the valley. The Blue Mist attacks the lungs—chokes out life—brings death—or perhaps not death—but I am too weak—”

That was all. At that moment death must have struck. Under what strange circumstances his father had died, or just *what* he had died from, Allan Rand did not know. He had often pondered over that queer phrase—“brings death, or *perhaps not death*”—without making any sense out of it. Insanity perhaps? Yet Allan Rand could not quite bring himself to picture that calm, clear-minded man who had been his father as insane, even in the face of a horrible, certain doom.

But Allan Rand was here to find out just what it all meant. He had induced his college chum, Curwood, to join him and together they had flown their bi-motored Douglas* flying laboratory down to San Lorenzo. From here they had gone out cruising three times, searching for the valley, finding it at last and picking a nearby landing on a broad smooth plateau not fifteen miles away. Then the final trip, two days before, with the Douglas well laden with supplies, and carrying Ramon and

the Indian. And now they were here at the valley itself, ready to solve its secret.

Tom Curwood returned two hours later. As his figure materialized at the edge of the fog veil, Rand gasped. He was carrying something! Gold? But it was white, not yellow. When Curwood emerged from shadow to bright sunlight, Rand saw what he carried and dropped his pipe. It was a human body!

Allan Rand leaped to flying feet and raced down the incline, shouting over his shoulder for Ramon and Queto to follow. When the three panting men reached Curwood's struggling figure, they stopped short and blinked in utter bewilderment.

“Good Lord!” stammered Rand, passing a hand before his eyes.

“A woman!” declared Ramon, dark face glowing suddenly. “A young and pretty *senorita*! *Caramba*! 'Tis impossible!”

Queto merely gave a grunt, then transferred the limp form to his broad shoulder and began climbing toward their camp at the top of the slope. The rest followed.

Rand helped Curwood remove his tank and helmet. “Works perfectly,” was the latter's first comment. He took several deep breaths, wiped his steamy face, and took a long draught of their tepid water supply. Rand could hold himself no longer.

“All right, Tom. Spill it before I bust. That body—”

As though reminded, Curwood strode to where the Indian had stretched the unbreathing, apparently lifeless girl on a patch of grass. He started. “A girl!” he exclaimed dazedly. “Well, I'll be darned!”

“You mean you didn't know?”

“I didn't!” returned Curwood. “I could hardly see in the first place, what

*The ship used by Rand and Curwood is a Douglas DC-2 Transport. Normally, this ship has a passenger cabin 26'4" long, 6'3" high, and 5'6" wide, fitted with seat accommodations for fourteen passengers. By removing the seats, a marvelous flying laboratory was constructed.

The ship is powered by two supercharged, geared Wright Cyclone air-cooled engines, each rated at 760 h.p. at 2,100 r.p.m. at 5,800 ft. It has a fuel capacity of 510 gallons (U.S.) and 38 gallons of oil. Each motor operates a controllable pitch, three-bladed metal airscrew.

It has retractable undercarriage, full swivelling tail unit, two shock-absorber units, and two hydraulic brakes.

Constructed of high-tension strength aluminum alloy, its wing span is 85 ft., its length 61 ft. 11½ in. and its height 16 ft. 3¼ in. Its useful load is 6,152 lbs. and total weight, loaded, 18,560 lbs. Maximum speed 210 m.p.h. cruising speed (at 8000 ft.) 190 m.p.m., landing speed 62 m.p.m., and rate of climb 1,000 ft./min. service ceiling 22,450 ft.—Jane's All The World's Aircraft, 1937.

with the damned thick blue fog and steam on my visor-plate. I just grabbed the first one and—"

"First one what!" exploded Rand. "You idiot, will you please explain what—" He waved his hands helplessly, at the valley and at the girl.

Curwood grinned. "I'd like once to see a man go crazy from curiosity, and Doc, you're pretty close to it!"

His face suddenly became dead serious. "Allan, your father was not—imagining things. He did see the unbelievable. And so did I! There are hundreds more like that girl down there, men and women, all lying around like dead. But I don't think they *are* dead! There are buildings down there, machines, implements of civilization. Don't ask me how they can be here in the middle of wild mountain land. They just are. The Blue Mist—"

A slight moaning sound interrupted. They whirled, to see that the girl was breathing, her lungs inhaling in heaving gasps. Suddenly she sat up. Wide eyes, bluer than the Blue Mist she had come from, stared around bewilderedly. Four pairs of male eyes watched her. To say the least, she was beautiful, Curwood reflected. Her olive-tanned oval face was framed by a cascade of golden hair. Her brief garments reached only to her knees.

"Hm, just as I thought," murmured Curwood, less surprised than the others at her sudden awakening. "Allan, that Blue Mist is some sort of preserving agent, keeping all those people in what we'll have to call suspended animation, since we don't know any more about it. Open air again revives them."

"Suspended animation!" muttered Rand, shaking his head doubtfully. "Scientific humbug—like unlimited atomic power. It can't be—" He stopped dazedly, finding this thing undigestible to his academic training.

"Don't be unreasonable, Doc," blithely returned Curwood, whose phlegmatic temperament accepted facts without question. "You must admit the girl's alive."

"But who is she? Who are her people?"

Together they looked at her, unable to classify her features, which were a strange blend of the northern and tropical. High cheekbones and slightly slanted eyes of Oriental cast, but also full lips, blonde hair and fair, though tanned, complexion of Nordic quality.

"Of what *race*?" demanded Rand of no one in particular.

The girl, in the meantime, had been staring at them in stark bewilderment. She looked down into the valley, realization dawning, then frowned faintly at the four men. Her blue eyes caught those of Curwood. She continued to gaze at him interestedly.

Curwood flushed and cleared his throat. Rand grinned in a preoccupied way. The girl's eyes suddenly flicked to Ramon and grew icy, offended, at his insolent frank stare which travelled ceaselessly from her toes to her face.

Ramon stirred. "But gold!" he queried. "Did you find gold down there, Senor Curwood?"

"Gold!" scoffed the latter. "Who cares about gold? There's people down there, man—strange buildings, mysterious machines." He turned to Rand. "Doc, if this girl revived, the others should. I'll go down there and bring them up one by one. However they got into the Blue Mist, they couldn't have any reason for staying in it forever. And—"

A slight cry from the girl interrupted him. She had listened intently while he talked and now she clearly enunciated a few words, looking from one to another for comprehension. The four men stared at her blankly. She frowned,

but spoke again.

Rand listened to the strange liquid tones, straining to understand. Somehow, he seemed almost able to. Several of her syllables and inflections were strangely familiar, yet annoyingly escaped his comprehension. It was as though his subconscious mind understood.

"Her words almost—" began Ramon. He too had been listening intently, baffled.

Then a thought struck Rand. Rapidly, he spoke to the girl in Spanish. At her doubtful glance he switched to Latin, stumbling over the difficult words and phrases.

The girl nodded eagerly now, and when Rand tried the few words of Arabic and Greek he knew, she sprang erect with a glad cry. She spoke now, while Rand listened intently. After a moment he shook his head, still puzzled, and motioned for her to sit down.

"Speak her lingo?" asked Curwood eagerly.

"Yes and no!" retorted Rand. "Listen to this, Tom. She can partly understand my Latin, Greek, Arabic, etc., but I can't grasp her language, except for a word here and there. Why? Because she speaks the basic mother tongue of all modern speech! She can recognize the meaning behind my words because they are variations of her tongue. But I can't quite make sense out of hers because I never knew the basic language."

"Well, that helps," said Tom slowly. "Though I don't see how you'll find out anything if she can't answer."

Rand, however, still looked dazed, shaken. "But do you know what it means, Tom? The basic mother tongue, which must include Chinese, Sanskrit, etc., goes back—and back! Thousands of years. Before the schism of the Mongolid, Hamitic and Caucasian races and languages came about. It is like find-

ing the missing link, parental stock of man and ape. Thousands and thousands of years—"

He stopped, appalled at the thought. Curwood snapped his fingers. "You can figure that all out for yourself, Doc, but I'm going down in the Blue Mist and bring up some more. Maybe—"

"No, Tom, not that way." Rand pointed to the far end of the valley, a sheer wall of precipitous shale. "Remember how thin that wall looked from the air? Beyond it is desert lowland. If we could once break down that wall, the Blue Mist would pour out of the valley like water!"

Curwood nodded. "Now I know why you insisted on taking that case of dynamite along—I get it."

"I came here for one main purpose—to solve the mystery of this valley, as my father wished." Rand looked again at the girl. "And there's plenty of mystery to work on."

CHAPTER II

Draining the Valley

IT was now late afternoon. Rand gave orders to set up night camp. Ramon and Queto went efficiently to work, setting up two tents, building a fire, and opening the packs of food. When sudden tropical night fell, they were eating. The girl ate with them, apparently unaffected by a sleep of unknown duration in the weird Blue Mist. At times her eyes peered down into the black shadow of the valley, with a vague expression in them, half of sadness, half of alarm.

But her eyes centered mostly on Curwood, softly, dreamily, save at such times as she shot the insolent Ramon a look of frozen scorn. Curwood, strangely stirred by her regard, found himself scowling blackly at the Span-

lard. Rand was too preoccupied to take note of these undercurrents, and after the meal tried conversing with her.

His voice rose often in query, and as often the girl shook her head, till both of them were nonplussed.

"Not much of a go," sighed Rand. "All I can do is ask questions and suggest the answers myself, and nine times out of ten I'm away off the track, apparently. However, her name is something like Aletha Ankhar. She has never seen our like before, she intimates, nor does she know how long she's been in the Blue Mist. By the way, Tom, she asked for your name!"

Curwood grunted and suggested they roll in. Aletha was given one tent to herself. The three white men rolled themselves in blankets in the other tent. Queto laid himself just outside the men's tent, on the grass, scorning the shelter.

The morning dawned clear and hot. After a hasty meal, Rand and Curwood left the camp and girl in charge of their two helpers and departed to reconnoiter for their plan to empty the valley of its mist. An hour later they looked down into the valley from its other end and examined the narrow rock wall that separated it from the mesa beyond.

It was unbelievably thin at the top and did not seem to thicken much at the base. A prehistoric river had dug out the valley, but what strange geological event had put this thin partition up, like a dam?

"It could be artificial," mused Rand. "Put up by these people for the express purpose of sealing off the valley."

"Scientific humbug," grinned Curwood. "Like their suspended animation."

"Something tells me I'll have to change my scientific opinions before long," pursued Rand, half bitterly. He pointed out over the mesa. "There's

our route, Tom. From our plane, we come up on the desert floor. No way of getting down that thousand feet from here."

"Right," corroborated Curwood. "A dozen sticks of dynamite ought to blast a hole through somewhere."

On the way back to camp they discussed details and decided to get everything set for the dynamite blast on the following morning. As they rounded the last rock overhang between them and camp, a shrill, feminine scream rang through the quiet air. Curwood bounded into a run and took the situation in at a glance.

Queto lay sprawled on the ground, eyes closed. Ramon had the girl in his arms and was brutally trying to kiss her. She was scratching at his face and struggling.

Curwood reached the Spaniard, spun him around by the shoulder, and lashed out with a hard fist. The blow landed squarely on the dark man's chin. Ramon bent at the knees and sagged to the ground. The girl ran into Curwood's arms, momentarily hysterical. For a second Curwood held her close, hot blood pounding, amazed at his own emotion. Then he pushed her brusquely away and turned to Ramon, who had struggled to one elbow and was rubbing his jaw.

"One more pass like that, Ramon, and you go back to San Lorenzo on foot!"

"Your pardon, senors," mumbled the Castilian, blanching at the threat. "It was the—the heat." But Curwood did not like the narrowing of his eyes as Ramon turned away.

"Bad blood," he muttered to Rand. "He'll try knifing next."

Rand bit his lip thoughtfully. "We can't waste time flying him back to San Lorenzo now. We'll just have to keep an eye on him."

A dash of water in Queto's face brought him to. The Indian glared balefully at Ramon's back. "Him hit me on head with rock," he explained shortly. "Him bad man!"

Before night fell, Rand, Curwood and Ramon had made the fifteen-mile trek to their plane and returned via the lower route to dump their dynamite and paraphernalia at the base of the tall partition between the valley and mesa. They were able to arrange the trailing wires and prepare everything for an early morning start before the sun dipped toward the western horizon. Then they made the laborious, round-about trek past the plateau cliffs and toward camp, arriving just after dark.

The girl, Aletha, looked at them with obvious curiosity as they ate.

"Why not tell her?" suggested Curwood. "It directly concerns her and her people."

"If I can get it across," said Rand ruefully. He began speaking to her in Latin, slowly and distinctly. Gradually a look of intense interest came over Aletha's face. Finally she dropped her tin platter and poured a flood of her liquid speech at Rand. Somehow, she seemed to be frightened and her tones were those of warning.

Rand spoke to her soothingly and she subsided with a worried shrug. But she made no attempt to take more food, having eaten very little.

"Something's bothering her about the draining of the Blue Mist," murmured Rand. "It isn't that her people would die, or be harmed in any way, but—" He faced Curwood squarely. "One thing I did catch when she talked. She said, 'Tom will be harmed!', and the rest of us too, I suppose."

Ramon spoke suddenly in corroboration. "Senors, she talk of great danger!"

"Oh, hang it!" Curwood exclaimed. "Maybe the girl's a little daffy, or you understood wrong. Anyway, we can't stop for a little thing like that."

A light shower greeted them as they arose at dawn, promising a stuffy day. Rand watched rain falling into the valley, vanishing in the opacity of the Blue Mist.

"Rain doesn't even roil its surface," he mused. "Must be tremendously cohesive, perhaps almost liquid. And it hasn't diffused into the upper air for at least—at the very least—four centuries!"

After breakfast, Curwood departed by himself, with the air-helmet, on the desert trek to the mesa side of the rock partition. The rest of the party leisurely followed the lip of the valley to the same point, but a thousand feet higher up. Aletha had insisted, by signs and unmistakable tones in her enigmatic speech, on going along.

Soon they saw Curwood's figure trudging up. He waved to them and set the lead-wire and plunger for the blast, three hundred yards from the rock wall. Then he donned his air-helmet and waved a warning.

"Back!" ordered Rand to his party. He led them a safe distance away from the valley's rim.

A minute later the ground rocked beneath their feet, followed by a dull thunder. A slow shower of shale fragments spewed from the direction of the valley and clattered about them. When all had quieted down, they raced back to the valley edge. Looking down, they saw the Blue Mist quivering strangely. Whirls and currents arose in the lake of vapor that had been quiescent for untold years.

Rand eagerly made his way to the cliff edge overlooking the mesa. Looking straight down, he saw the Blue Mist pouring out near the base of the rock

partition. Like a river it billowed over the mesa-land. Before it stretched a hundred miles of smooth desert over which it would diffuse to nothingness.

Curwood stood there, a tiny, helmeted mannikin, watching. He waved and then the flood of Blue Mist enveloped him. Rand heard a little moan beside him. Aletha had also seen and her eyes were filled with apprehension. Rand spoke to her in Latin and was amazed at the joy that came over her face when he had made her understand that Curwood was safe.

Two hours later Curwood joined them at their camp and together they watched the incredible sea of Blue Mist empty out of its centuries-old bed. Eagerly Rand and Curwood waited to see what would be revealed.

They gasped as first a tower and then the outlines of other buildings materialized out of the thinning fog. The entire floor of the deep Valley was taken up with them. In the very center, a curved object slowly took form and finally lay revealed as a large, torpedo-shaped ship of some sort, with narrow flanges running from nose to stern.

But the watchers waited to see something more vital—the forms of the people who had inhabited this strange city. The level of the blue fog sank. In another half hour the last hazes of it had been swept away and all lay revealed.

"Look!" whispered Rand. "Hundreds of them! People who fell asleep, or whatever it is, in the Blue Mist—but how many years ago? Lord!—how many unthinkable *centuries* ago?"

CHAPTER III

The Sleepers Wake

CURWOOD broke the spell, "Nothing like finding out," he said. "Let's go down and—"

A sob interrupted him, from Aletha.

Her blue eyes, gazing at the quiescent scene, filled with tears. She pointed to the valley and shook her head vehemently, speaking in her liquid tones.

Rand caught something and questioned her sharply, in Latin. The girl seemed anxious to make her meaning clear, staring as though trying to make him understand by sheer force of will.

Finally Rand switched to English. "By glory, Tom, I grasped at least-half of that. Either I'm beginning to catch on to her patois, or she's modifying her words to something near Latin. At any rate, she says most of those down there are her people, but are 'bound'—I think she means enslaved! She said, in about six different ways, that we are to watch out for the Twelve—they seem to be a sort of composite Simon Legree. What did you make of it, Ramon?"

"She say the Twelve are terrible and powerful!" returned the Castilian.

"I think we'd better go well armed, Tom," said Rand. "No telling—"

A few minutes later, armed with pistols, they went down the slope, eyes fastened eagerly ahead. Already some of the sprawled forms in the strange city were stirring on the ground. A low moan arose in the air, as of hundreds of persons yawning and awakening at once. When they had reached the valley floor, several of the figures were sitting up, blinking dazedly.

Rand, in the lead, let out a startled cry. "Look, Tom!" he gasped. "That figure—the one in armor—he's not like Aletha's people. He's—by glory, he's a Spanish Conquistador of the 16th Century!"

They saw other spade-bearded men, wearing corselets of metal, with swords in hip scabbards. Also other strange figures—men in 17th Century French cloaks, 18th Century English woolens, 19th Century Daniel Boone costumes. It looked like some mockery of a mas-

querade party. But by far the majority were golden-haired people like Aletha, dressed in abbreviated kirtles and loose blouses.

"I get it!" whispered Curwood, awed. "Every one who has come here for the gold since the Spanish first explored has succumbed to the Blue Mist—and *lived!* Doc—"

But Allan Rand was running ahead, with a queer, intense look on his face. He was searching every form he passed, every face. He disappeared around the corner of a building. Curwood suddenly understood and snapped his fingers. Then he turned curiously as he saw Aletha fall to her knees beside a golden-haired man who was sitting up. Aletha spoke to him eagerly, smoothing his brow tenderly. The blankness in the man's eyes suddenly cleared and he clutched her to him, babbling.

Curwood turned away, lips tight. He forced himself to take note of the surroundings. The buildings around were of a strange, ornate architecture. Toward the center line of the valley, where the sunlight was strongest, were the huge machines he had vaguely seen through the visor of his air-helmet during his first descent into the Blue Mist. Mirrored and skeletal, they seemed to be some sort of sun-engine. Thin vanes within glass spheres began already to rotate as the sun's rays poured into them.

And everywhere was gold. Every building's cornice was of shining yellow sheet metal; the frameworks of the sun-machines, and even the paving blocks of the city's wide main avenue.

Ramon's dark, avaricious eyes were glowing. He looked from the gold of the buildings to the golden hair of beautiful olive-skinned women, and a madness came into his eyes. It was *El Dorado!*

Queto stood dumbly, staring as

though it were an incredible dream-city.

"I pray you, good sir," said a voice almost in Curwood's ear. "Canst tell me what has happened? 'Tis witchcraft! But an hour ago I fell asleep in the Blue Mist and now—God pity this poor soul, but I understand not!"

"You and me both," returned Curwood unhelpfully. He looked half pityingly at the grey-eyed man whose speech and clothing were of 18th Century England. "Brother," he muttered to himself, "I wonder what you'll think when you realize this is 1938 A.D., two centuries after your time! Why, you don't even know there was a Napoleon!"

The man staggered away uncertainly, searching for his companions. Ramon was exchanging words in Spanish with one of the Conquistadors who had arisen. The latter finally clapped a hand to his sword-hilt angrily, as though to draw it. Then he spied one of his companion Conquistadors and ran toward him, forgetting Ramon.

"He call me a dog Frenchman," laughed Ramon, "because my accent so different from his. So I tell him to go lie down beside Balboa's bones, and that make him mad!"

A confused babble now arose as all the sleepers of the Blue Mist looked around, mentally stupefied. Archaic French, Spanish, English filled the air. Bewildered, shocked faces looked around and lighted suddenly to behold others of their kind. Soon little parties formed, jabbering in their own language among themselves, glaring suspiciously at other groups. In all their eyes was reflected the golden glare of the immense wealth of tawny metal around them. They had all braved the Blue Mist for that one thing. It was the sole common thing they had among them, though their minds, times, customs,

clothing and all else were different.

"Valley of Lost Souls!" Queto murmured beside Curwood and the latter reflected that legend for once was close to the truth.

Aletha's people, the true inhabitants of the valley, were first to recover mental orientation and go about their business. They began to stream toward the large space at the center of the valley, where the large ship reposed. They did not seem too surprised at the queer outsiders in the valley with them, but nevertheless stared at them curiously as they passed.

Aletha, however, did not join the moving throng. Holding the golden-haired man's hand, she brought him eagerly before Curwood and pointed to him, speaking to her companion excitedly. The man looked at Curwood with a half-friendly, half-suspicious expression. Curwood did not know it, but he in turn was scowling.

Then he spied Rand returning, rounding the corner of a building. Curwood blinked. The man whose arm Allan Rand held looked like his older brother.

"My father!" panted Allan Rand, coming up. "I knew I'd find him alive, too. Look, Tom, he was thirty years old when he came to the valley, twenty-five years ago. He is still thirty, physically, just two years older than I, his son!"

"The Blue Mist—"

"Of course," Rand nodded. "It preserved human bodies, buildings, metal, everything in this valley, from the hand of time. Impossible, but true!"

The elder Rand gravely shook hands with Curwood. His eyes had a punch-drunk expression. "It is a miracle to be alive!" he whispered hoarsely. "But I knew I would be, seeing the others preserved in the Blue Mist. Just before I succumbed to the mist, I wrote that note to Allan. It hardly seems pos-

sible that it was twenty-five years ago! I gave it, and the map, to the Honduran of my party who had come into the mist, searching for me. He had not been in long enough to yield to it. Thank God for that!"

"The same map," murmured Allan Rand, "that brought these dozens of adventurers of four different centuries to this valley! Has fate ever played a stranger game? And Aletha and her people? That is the mystery to be solved!"

They turned to the rest of their party. Aletha and the golden-haired man were still talking excitedly. Queto stood stolidly by. Ramon, however, was missing. When questioned, Queto could only say that the Castilian had slipped away in the crowd.

Aletha tugged at Allan Rand's sleeve and spoke, voice shrill, accents worried. Rand swung to the others. "Aletha says we must leave," he announced. "She says chances of escaping the Twelve, whoever they are, are getting slimmer every second. Up the slope, all of us. I'll try to get more out of her up there. She risked coming down here in the first place only to find her brother here, Enzal."

Rand did not notice that Curwood's face suddenly cleared as if by magic at the word "brother." But Aletha did; she drew close to him as the party set off for the slope at a half-run. Curwood felt like kicking himself for not noticing the strong family resemblance in their faces.

"I don't quite see the sense of this," panted the elder Rand to his son as Aletha sprang fleet-footed to the fore and urged them on with frantic gestures.

"Nor do I, exactly," confessed the younger man. "But I can tell you that girl is dead serious about the danger."

Aletha and her brother both showed

by their fear-struck faces that they expected some form of resistance from the mysterious Twelve back in the city. They scrambled up the slope pantingly. Some deep-rooted dread of what lay behind lashed them on. The others wondered.

Suddenly, when they had achieved more than half the slope, they all stopped, as though by command. To Allan Rand, it felt like the effect of a narcotic drug. Though his conscious mind could think as clearly as before, something had gripped his subconscious with intangible fingers. Against his wishes, he found his body turning back to the valley. Alarmed, he tried to fight off the insidious hypnotic spell, but he could not move another inch up the slope.

The party of six made its way down the slope, under command of an alien will!

"Damn!" gasped Curwood. "What is this? Doc, any idea? Can we break out of it somehow?"

"I'm afraid not," Allan Rand's eyes were bleak. "Some devilish force has gained control of our locomotor brain-centers. Suspended animation—mental control! God, what sort of wizards are these Twelve!"

The two golden-haired people had fallen silent. They stumbled down the slope in dejection, shoulders drooping. Their manner spoke so eloquently of defeat and despair that a gloomy pall of silence fell over them all. Like robots they strode toward the center of the city.

Here, circled by buildings was a large space filled with the entire population of the valley. They were clustered around a central platform, back of which was the huge, finned ship, and beside it a tall, needle-like tower of gleaming metal from whose apex every inch of the valley floor must be visible.

Several figures were in the tower, manipulating strange mirror-like devices.

The ranks of the golden-haired people parted, leaving an aisle to the platform. Under the weird mental control, the party of six made its way to the dais, stood before it. They found themselves beside the lost souls of the past centuries. They, too, had been herded here by the mental control. Their superstitious faces glowed with stark fear at this manifestation of witchcraft. And it was plain that all the hundreds of golden-haired people back of them, too, were in fear and awe of the figures on the platform, who had brought this all about.

CHAPTER IV

Slavery

THEY were the Twelve. A dozen men of the golden-haired race, lines of haughtiness, even cruelty, in their faces, sat in ornate chairs on the dais, looking disdainfully out at the crowd. One of their number was haranguing the golden-haired people in their own tongue. Suddenly he waved a hand in dismissal and the crowd dispersed, quickly and obediently, vanishing among the buildings.

Curwood suddenly grunted and nudged Rand, pointing to the far end of the platform. A thirteenth figure was there, leering at them.

"Ramon!" gasped Rand.

One of the Twelve now stood before the motley group remaining. He fastened his icy blue eyes particularly on Aletha and her brother and queried them sharply. Aletha answered, first with humble fear, then with stubborn defiance. The eyes of the man on the platform blazed angrily and he spoke imperiously.

Aletha turned a grave face to Allan Rand and words tumbled out tremu-

lously. Rand's face grew worried. He translated to the others. "The Twelve are angry at her and us for trying to escape. No one must escape the valley. We are to be slaves to the Twelve, just as Aletha's people are and have been! Evidently Aletha told them they had no right to enslave us, but the Twelve say they are masters of all who come before them. Maybe I'm making this up, I don't know. But she intimates that they consider themselves the future rulers of all the world, by right of conquest!"

"The Napoleon complex, eh?" ground out Curwood. "We'll see about that." He gripped his friend's arm fiercely. "Look—fifty armed men here who owe no allegiance to the Twelve. Four of us have pistols. And that damned mental control isn't on us right now. Doc, you rally these men in French and Spanish; I'll use English. We'll settle this master business here and now—"

Realizing the advantage of swift attack, Rand agreed, whispering hastily to his father and Queto. Curwood gently pulled Aletha back of them. At a prearranged signal, Rand and Curwood drew their pistols and fired pointblank at the figures on the platform, shouting loudly in the meantime to the fierce armed men around them, in three languages. Men of action, they caught fire instantly. Swords, knives and ancient flintlocks flashed in the sunlight. With a concerted rush, the fifty men swarmed toward the platform, faces alight with battle lust.

Strangely, the Twelve on the dais were not alarmed. They did not even arise from their chairs. Nor did any of them fall from the bullets aimed at them. And when the vanguard of the warriors tried to clamber up the edge of the platform like pirates boarding a vessel, an invisible wall of force bruised

their knuckles and bumped their heads. In utter surprise they fell back. Then fear drove the battle light out of their faces. This again was witchcraft!

"No use!" groaned Allan Rand, as Curwood reloaded his emptied pistol. "Our bullets don't even get there. They are protected by an invisible barrier. They *are* wizards—scientific wizards! In a way, we played into their hands, for they have proven themselves invulnerable!"

Curwood swore, shot three more times at the Twelve with deliberate aim. Plainly he could see sudden disks of lead form in mid-air at the edge of the platform, and drop to the ground. Aletha came before him and stared up into his face, blue eyes brimming with tears, smiling sadly. She seemed to voicelessly praise his bravery and deplore their helplessness.

Then, as though to demonstrate further the Twelve's power, the intangible mind-gripping mental ray bathed them again. Under command of the alien will, weapons were tossed in a heap. Curwood strained to resist but found himself tossing his pistol atop the pile of swords, as though he were another person.

Rand looked up. That ray came from the top of the tall tower. And perhaps the curtain of protective forces also. Energy came from the giant machine beside the tower, its strange mirrors gathering in sun-power silently. Were they inoperative at night, or did they store power?

Now unarmed and sheepishly humble, the half hundred of four centuries stared at the Twelve, wondering what their fate was to be. Finally a tall, dark figure stepped in the speaker's position. It was Ramon, smirking in the direction of Rand's group.

"He's evidently wormed into their confidence," hissed Allan Rand. "He

knows Latin, of course, and so made himself understood."

Ramon gave a short, concise message in Spanish, French and finally English, addressing the entire group.

"You are slaves of the Twelve," he said. "The Twelve are all-powerful, as you have seen. They are mighty wizards of a land far away in time. Do as you are told and no harm will come to you. Do not try to escape the valley. The next one that tries will be killed by a burning death. The Twelve have spoken! You will now be led to the far end of the city, to labor. Remember, death comes swiftly if you disobey. Go!"

Cruel-faced men with long, black whips had now appeared behind the massed group. Snapping them, they motioned down the long main avenue. Cowed, crestfallen by the overwhelming events of the past hour since the awakening, the men obeyed. They were no longer proud Conquistadors, haughty French noblemen, empire-building Englishmen—they were slaves! The whips cracked and the lines moved faster.

Ramon stayed Rand's group and spoke to them. "Slaves!" he jeered. "Look upon your master! But yesterday you, Senor Curwood, struck me. You shall suffer for it. The girl, Aletha, thinks I am not worthy of her. I will have other slave-women, and her, too. But now to your labors, slaves!"

Curwood turned in contempt, cursing under his breath, and he and his companions followed the last of the other-century men out of the large central space. They were led down the long main avenue toward the far end of the valley, flanked by men with whips.

"Aletha was right all the time about things down here," muttered Curwood.

"If we had only known the full truth

at the first!"

"Mysterious business," said Allan Rand, preoccupied. "Just who are these golden-haired people? From what civilization and time? Why the Blue Mist?" One amazing theory ran through his mind like wildfire.

Soon they came upon a hundred or more of the golden-haired people, also slaves, quarrying within a large limestone fissure at the base of the valley's sheer northern wall. Crude saws, drills and levers were their tools, in sharp contrast to the magnificent machines in the city. Driven by the whips, the slaves were made to load the huge stone blocks on rough litters and drag them over the hard, caked ground by ropes, toward the city's fringe. Here, a new building was being erected in much the same manner as in the Middle Ages.

It was hard hot work in the broiling sun. Curwood's face became savagely bitter when he saw that Aletha was the only woman in the quarry. It was her punishment for engineering the near-escape. Night fell before much had been done, but they trudged cityward with already aching muscles and sweaty bodies.

They were herded into a large building, fed a weak, tasteless gruel, and then allowed to lie down on the floor to sleep, without blankets or comforts of any kind. It was barbaric slavery of the cruelest sort, evidently administered to bumble their spirits. Stupified, mentally fogged, the other-century men muttered among themselves for a while and went wearily to sleep.

Rand and Curwood discussed the situation in low tones. The elder Rand seemed weighed down by bewilderment and spoke little. Queto sat stolidly, philosophically inert. But his eyes gleamed a little when they spoke of escape, at night when the moon had set and all was dark. Aletha, dispirited,

sat close to her equally depressed brother, both silent. For them, the interlude of the Blue Mist sleep had been but a second's interruption of their slavehood.

Curwood had purposely chosen, for their group, a position near the open doorway. In the middle of the night, sleepless, they crept out silently. Strangely, no guards were about. The way was open. It seemed suspicious, as though the Twelve feared no escape at night for some very good reason.

They stumbled along, led by Curwood toward the slope. When they rounded the last building, they saw the reason for a strange glow ahead. A broad beam of light bathed the entire width of the slope and up for a distance of a hundred feet. Beyond was utter darkness and perhaps safety. But no one could cross that illuminated stretch without detection!

Curwood was about to suggest a desperate try when they saw several other crouching figures in the shadows ahead. Some of the more spirited of the other-century men were here, seeking freedom also. These darted forward suddenly, six of the spade-bearded Conquistadors shed of their armor, widely separated in cunning strategy.

Into the lighted area they dashed, up the slope with flying feet. Soundlessly, something stabbed from the tower back of them. The first man stopped, shriveled into something black, fell. With pauses of a second or two between, the others were picked off, charred by some horrible beam of incandescence. The last man, seeing, gave up and attempted to run back, screaming in surrender. He too, fell a blackened corpse.

Aletha said something in the dead, horrified silence. "She says it is the same now as it was before—no escape," whispered Rand. He shuddered in nausea, as an odor of burnt human flesh

wafted down to them.

"Wait!" hissed Curwood. "The other side—the hole we blasted in the rock-wall! Maybe they haven't—" He led the way at a run. But long before they had arrived, they saw that another beam from the tower lime-lighted that single other egress from the valley of slavery.

They returned dejectedly to their sleeping place, aware as never before of the Twelve's diabolical thoroughness. They slept a few weary hours before dawn brought the men with whips.

The next day was a nightmare. The overseers with the whips lashed often with them. Many a man staggered around with stinging, bruised flesh. One slender Frenchman, a mere lad, collapsed in the heat. He was flogged mercilessly and left to die in the hot sun. A friend who knelt beside him was driven away with the whips.

Water and food were distributed sparsely at noon. Rand wondered how any of the golden-haired slaves could still be alive under such treatment in the past. He surmised that there were other grades of slaves, better treated. These in the quarry were the most beligerent, most defiant. The new men were here to have their spirits thoroughly broken before being given a place in the city.

Curwood contrived to keep always near Aletha, taking half her burden whenever he could. He stepped before the lash that came her way once, and for his pains received three more. His eyes became cold, glittering orbs of slow, dangerous wrath. Yet he kept his control in the face of helplessness.

With tight jaws he worked on, until a disturbance came.

All heads, even those of the whip-holders, jerked up and stared as the huge airship at the center of the city lifted into the air silently and soared

grandly, magically, over them.*

Then it darted away to the north, with incredible velocity.

"Gravity motors!" marvelled Allan Rand. "The science of these Twelve is that of supergenius. If only the modern world could have some of it!"

"I wish we had dropped a stick of dynamite into the Blue Mist first, and then drained it away," growled Curwood.

The back-breaking labor went on, human souls being crushed beneath the heel of tyranny. In the late afternoon, just after the airship returned from its mysterious cruise, a guard approached Aletha, spoke, and pointed to her companions.

"An audience with Ramon," translated Rand.

CHAPTER V

Running Death's Gauntlet

THEY were led to the city and into a building whose interior was blessedly cool. In a room dazzling with gold floor, gold statuettes and golden table sat Ramon, now dressed in a flowing robe spangled with golden threads. A golden light of madness shone from his eyes as he stared insolently at the tired, sweaty faces of his erstwhile companions. They had to stand before him, since he occupied the only chair.

"Slaves!" he greeted mockingly.

"Better than being a rat!" snarled Curwood.

* All through the legends of ancient Atlantis and Lemuria are references to these mysterious ships that apparently used no motors with moving parts, or any known means of propulsion. They were not rocket ships, because the most significant feature of their operation was their complete silence. However, according to the majority of legends, they were powerless to ascend to very great heights, and their ceiling seemed to be in the neighborhood of 600 feet. Thus, the ship of the Ancients in the valley must have been an improvement over the original Atlantean ships.—Ed.

Ramon ignored this. "I will tell you what I have learned of these golden-haired people," he continued, "so that you may know to what heights Ramon Hernando will rise. They represent a civilization and science greater than the present. After much effort with Latin, I have pieced together something of their history."

Allan Rand leaned forward in deep interest.

"Their time flowered some fifteen thousand years ago!" pursued Ramon. "They lived on a huge island or continent known to us in legend as—Atlantis!"

"Atlantis!" breathed Rand, nodding as though he had known all the time. "But why did they come here—the Blue Mist—"

"Listen!" admonished the Castilian. "Atlantis was great and powerful for five thousand years, but in her decadence refused the leadership of—the Twelve. These Twelve were her best scientists. They were exiled for their political activities. They came to this valley, built the city, cleverly abducted these Atlantides as slaves. It took years of great planning and effort; I do not know the full story. *Then they destroyed Atlantis*, in fitting revenge!"

His audience stared in shocked silence. Aletha, apparently sensing of what he told, turned to her brother with a sad face. In their eyes was reflected a fresh horror at that great and terrible holocaust of a long-gone age. Millions upon millions of their people, all the world they had known, had been wiped out of existence, in a totality of stark destruction that stunned the mind to think of it.

Even Ramon's face was solemn as he went on. "I know not how it was done, but Atlantis, and all within it, were caused to sink beneath the waves. A holocaust of land and sea in turmoil

spread all over the earth of that time. But the Twelve were prepared. They had picked this valley, knowing it was safe, for it rested on faultless bedrock. Then, to escape death by the deadly inner-earth fumes that spewed forth from great rents in the writhing crust and saturated the air, they filled the valley with the Blue Mist, deathless, protective, unchangeable by time. Only in one thing did they miscalculate. A machine set to disperse the Blue Mist at a future time failed to work, for it, too, had succumbed to the timelessness of the Mist.

"They had set it to awaken them about a century after their time, when earth would have again quieted down, and start a new civilization under their rule. Instead, they have awakened in this late age, when the descendants of some hardy, barbaric survivors have repopulated earth and builded another civilization. They find the earth which is theirs ruled by others. But they are undaunted, the Twelve. *They will conquer this modern world!*"

"So, just like that?" challenged Curwood.

"Why not?" returned the Castilian easily. "The superminds that clashed the elemental forces of land, sea and inner-earth together to wreck a world can easily destroy cities and armies. Today I rode in their marvellous gravity-ship. In four hours we whisked to New York City and back, some ten thousand miles I believe, via the stratosphere. I have told them to attack that city first, in their campaign for world conquest!"

"You devils!" grated Curwood, clenching his fists.

"I am to be an important part of their plans," went on Ramon boastfully. "They need someone like myself to tell them of a modern world they must conquer. I have already been granted au-

thority. You, my friends, will continue to slave in the quarries, save for the girl, if she wishes. Aletha—" He switched to Latin.

Curwood could not understand the words, but by the disgust in Rand's face and the flush in Aletha's, he knew what the Castilian was offering.

"Damn you—" Curwood sprang forward, intent on smashing the insulting, leering face before him.

Ramon, prepared, quickly pressed a button on the table. Curwood's body jerked to a halt, relaxed. Though the veins stood out on his forehead in effort, he could not move another inch toward his enemy. The mental control, emanating from some hidden mechanism in the room, had robbed him of volition.

"Go, fool!" commanded Ramon triumphantly. "You will labor unfed in the quarries. I will let Aletha watch you die by inches. That should soften her haughty manner!"

Out in the hot sunshine, Rand looked wonderingly around at the city. "Atlantist!" he murmured. "This is of Atlantis, of fifteen thousand years ago! The most fantastic fable of antiquity come true! A greater civilization than that we know wiped out by twelve superscientists—twelve malevolent minds which touch the heights of genius and the depths of depravity. Twelve—"

"Thirteen, you mean!" grunted Curwood. "Thirteen sadistic devils in a valley of hell! Ramon, curse him, I'll—"

Rand grasped Curwood's arm tightly. His lips twitched. "Tom, let's not think of ourselves. Let's think of the world! It may sound melodramatic, but we're about all that stands between the Twelve and world conquest! No Alexander, or Napoleon, or Fascist dictator ever had behind him such inconceivable power as these Twelve. I am a scien-

tist. So help me God, I have seen things *impossible* in my science! Their science and our science—like the machine-gun against the spear. Do you see?"

"Is it as bad—as that?" queried Curwood thoughtfully. No answer was needed.

Dog-weary from their labors, they sat down that night in the sleeping-place. The golden-haired guards that came around with food passed them by. None of the other-century men offered to share with them. The portions were pitifully small to start with.

"Ramon has ordered our death, by starvation and hard labor," Rand sighed bitterly. "He knows alive we'd sooner or later throw a wrench around here. Perhaps tomorrow he will have us murdered in cold blood. Aletha, poor girl—"

"Tonight!" hissed Curwood, suddenly. "We must try it tonight!"

He beckoned the others of his group near him and whispered rapidly. "If both exits of the valley are rushed at once, perhaps somebody can win through, escape, warn the world! We can't look for help from the other-century men—drugged with superstition. Nor Aletha's people—slaves too long, broken spirited. Besides, a large crowd would be no good; alarm would spread prematurely. We must do it ourselves—our group! It's a gamble with death. But of course I can't force any of you—"

The elder Rand spoke up quickly. "Count me in. I'm living on stolen time—should have been dead twenty-five years ago. Let death have me now, if it must."

Queto grunted. "Bad medicine stay here. Me try."

Rand translated to Aletha and Enzal in Latin. He rendered their answers in

English. "Enzal says he is willing to risk life for his people. Aletha—well, Tom, I guess you know—" He smiled wanly at the flash in their eyes as they looked at each other, pledging devotion, sacrifice. He went on, "Six of us, three at the slope, three at the wall-aperture and may God save one of us!"

"No!" said Curwood sharply. "Five of us at the slope—to draw the full attention of the tower men. Only one at the wall-aperture. That'll be you, Doc—"

"You!" returned Allan Rand. "You can run faster—more chance. Damn you"—he went on fiercely as Curwood tried to argue—"don't think of me. This is for all of us, for all we know, love, cherish in the outer world—"

It was arranged that way. Hours later, they crept cautiously past the snoring, sprawled forms of the past-century men, stepped out in the unlighted, dead-quiet city. Only the undiffused beams from the tower could be seen stabbing to both ends of the valley.

Curwood shook hands silently with Rand, gripping his shoulder eloquently. Aletha he kissed tenderly on the forehead, staring a moment into her tear-shining eyes. Then he waved to the others and turned.

"Wait for my signal, Tom," admonished Rand. They separated. Curwood's tall figure vanished in the darkness.

Rand led his silent group toward the slope. Arriving, they stooped and crept to the edge of the broad, lighted area, widely separated. Each had been told what to do, both now and later if one escaped.

Lips moving unconsciously in a prayer, Rand gripped the rock in his hand firmly, then stood and cast it with all his strength for the nearer cliff. A second later a sharp crack resounded through the silent valley.

The signal!

Rand raced forward with a shout. His four companions jumped erect and plunged up the slope, into the illuminated area of burning death. Rand winced and waited for the death-beam to shrivel him to a corpse. But it flicked to Enzal first, and the golden-haired man was the first martyr in their race against death. Rand saw Aletha stumble momentarily, scream once in sharp sorrow, and then bravely fly on.

Rand gasped as he saw Queto, to the left, leap off the ground, turn black, fall—a t w i t c h i n g, charred corpse. Number two! Who would be next?

A sob racked his throat then as his father staggered—Rand turned his eyes away, horrified. Number three!

Lost in a nightmare daze, racing endlessly it seemed through a ghastly white land, Allan Rand was vaguely aware of a voice screaming to him from a distance. It was Aletha, in her strange language. But he could not see her. Was she—?

Then he caught it, veered, and a second later flung himself down behind a large boulder beside Aletha. They were still in the lighted area but protected completely behind the rock's long, slanting shadow. Safe for the moment. Rand saw the ground at their left suddenly smoke and seethe. The trail of invisible fire moved toward their rock. The tower-men had seen the two dive down behind the rock, would try to rout them out. Rand put a protective arm around the trembling, pale girl and waited for the end.

But the smoking trail ended abruptly before it reached their rock. Sudden realization smote Rand. It meant that they had discovered Curwood's racing figure at the other end—were swinging the beam toward him—

With one sharp, peremptory word to the girl, Rand sprang erect, leaped out

into the open glare, waved his arms, shrieked, anything to attract their attention to him—

Allan Rand screamed in triumph as he felt an exquisite flame bathe his body. His clothing puffed into instant vapor, searing his flesh. The horrible, invisible fire ate into his vitals, made him dance and writhe. He knew then, with a supernal second-sight, that this act had given Curwood another few seconds of grace—had assured him of escape—

The golden-haired girl behind the rock put her hands to her eyes, sobbing. Then, driven by instinct, she jumped from her place of concealment and raced fleet-footed the remaining distance toward the beckoning arms of cool shadow ahead—toward safety.

Tom Curwood, half mad with the suspense of his companions' unknown fate, ran most of the way to their parked airplane, arriving an hour later as early dawn tinged the eastern sky with crimson. Eagerly he started the motors, let them warm up. He placed the four sticks of dynamite remaining from their supply in the second pilot seat, sat himself in the first.

The Douglas thundered into the air, plunged for the valley. He cut the throttle and made a wide, almost noiseless circle over the valley, five minutes later. He counted the little specks of black on the slope—four! One had been saved! But four had died! His plane soared over the center of the valley, directly over the tower and ship. He could see alarmed, scurrying figures stare up at him. Several were heading for the ship. If they once got into it and soared up to meet him—

Curwood grasped the first stick of dynamite, shoved it through the opened panel in the cabin floor. "For the Twelve!" he shouted aloud. Another went through. "For you, Ramon!"

Again a stick dropped. "For civilization!"

The fourth stick hurtled down toward the tower. "For the four that died!"

He watched for a moment. Now the first stick had arrived, and with graceful slow-motion, the central tower collapsed, undermined at the base. Its heavy metal girders fell athwart the ovoid ship just as it trembled from the ground, bowling it over. The second stick that landed flung jagged blocks of stone from the nearest building, ramming the ship mercilessly.

The third stick tore the roof of the next building gaping open, revealing the golden room in which Ramon had taunted them the day before. Curwood allowed himself to believe that it had ripped Ramon to bloody shreds.

The fourth stick struck the huge sun-engine, its explosive force trebled by some fulmination within the quartz globes that released itself with tornadic violence.

Curwood then thought of himself, and sent the ship upward. At the top of a swift climb, he twisted his head and looked down. A pall of dust had settled over the scene of upflung debris. He could not see what pandemonium reigned below. Then his eyes popped open.

Something more was happening. The towering eastern wall of the valley, a sheer mass of rock, slowly split from its matrix and hurtled down into the valley. The dynamite blasts had begun a minor geologic cataclysm, through vibration and concussion. Curwood had a confused impression of the rest. He saw the upstanding lip of the

valley's western side also teeter as great cracks appeared in the shuddering rock. A mighty thunder rumbled up from the scene as mountainous masses shifted, trembled, crashed. Curwood could not even hear the powerful roar of his propeller.

A half hour later, still circling, he gazed down on what looked like a great meteoric crater. His eyes were dazed at what they had witnessed. Innumerable tons of rock and dirt covered

what had once been a teeming city. Nothing wrought by the hand of man showed through that jumbled earth-heap. It was unlikely that one single soul had escaped.

"God!" Curwood whispered to himself. "All those past-century men—Aletha's people—destroyed! But better so perhaps—"

An hour later, after parking the plane again and trudging back to the valley's crest, Tom Curwood approached with bated breath. Who was the one that had



Mountainous masses shifted, crashed

been saved of the five—

His heart almost stopped beating as a tremulous cry came to him. A moment later, enfolding Aletha in his arms, he touched her golden hair wonderingly.

"Came here looking for gold," he murmured. "Found it!"

Then, ashamed of himself for the thought, he strode with her to the top of the slope and looked down into the vast ruin. He started suddenly. Something was moving on the slope, above the level of debris. It was Rand, crawling painfully on hands and knees!

Curwood ran down to him, picked him up in his strong arms. Rand's skin was blackened and blistered.

"I'll live!" he mumbled. "They must have turned the beam away too soon. . . . Great job you did, Tom—great—"

Allan Rand fainted then, in his friend's arms. Curwood trudged up the slope with his limp body. He and Aletha would nurse him back to life.

Tom Curwood glanced back once over his shoulder. Valley of Blue Mist was buried forever. Never would the world of man know, or believe—

THE FOUNTAIN OF YOUTH IS FROZEN

by H. W. JONES

IN SILENT awe the long line of gaping visitors filed past the glass coffin.

"The first of next year they wake him," one whispered. "Wish I could see it!"

"Yes!" another breathed. "Every fifty years he comes to life for two weeks. Just two weeks! I don't think I'd like that."

"Neither would I, but that's what he wants. He was—I mean is—a true Scientist. Curious about the future. Even so, he may decide to remain with us—or some other generation, some day."

The two passed on but many more came to look at the pale, inanimate being in the glass case. A young girl paused to stare.

"Over three centuries old!" she thrilled softly.

"Imagine it!" returned her companion. "He's existed that long, but he's lived for only thirty-odd years. Let's see, he was thirty-two when his suspended animation was begun, and counting his awakenings since then, he's actually lived only three months more. Why, he's still a young man!"

"He could still fall in love!" the young girl breathed with a rapt expression. "How good looking he is, and so healthy! I'm glad I did come to see him. I'm sure now that the cold storage treatment is rejuvenating and healthful. Now I won't be a bit afraid, and maybe he . . ."

"Jane! You didn't tell me you were going to . . . you can't mean . . .!" began the other in utter surprise.

"Why not?" the young girl turned defiantly. "I guess if he can do it, I can. Anyway, I haven't made up my mind yet. But I am going to take the one month treatment. In August, I think. The rest cure will do wonderful things to me."

The other girl nodded. "Yes," she admitted, "it is wonderful how these treatments add to a person's life and how marvelously they tone up the system. I'm afraid we take them more or less for granted. But if I thought you meant you'd make it more than the usual one month treatment . . .

Jane, you are leaving right now, before you fall in love with this man!"

IS THIS too fantastic to believe? Well, let me give you the facts as they now exist.

The man behind it all is Professor de Lample, a Dutch scientist. The secret of his success he calls *Vitaprolongin*, a glandular extract from young cows. This miraculous compound, injected into the blood stream, enables the body temperature to be lowered to almost zero without ill effects, in fact with all the happy results suggested in the foregoing narrative. How can I be so sure? Because after numerous and exhaustive experiments on lesser animals, a human being has been subjected to the test!

A dependent young lady, Miss Anna Broog by name, brought her pain-racked body to the scientist and beggily volunteered to put his achievement to a practical test. The doctor consented.

First came an anesthetic; next an injection of *Vitaprolongin*; then a saline bath and the experiment was begun.

For forty-two days Miss Broog lay in a deep sleep, a peace undisturbed by dream or worry. Every organ rested, every muscle and nerve lay quiet. And each moment of slumber, through a specially treated portion of the frost-covered enclosure in which she lay, her facial expression was under hawk-like surveillance for any untoward signs. Then, believing it time for her revival, the Professor gradually resuscitated her.

The difference in the woman was amazing. Wrinkles of worry were erased, a prolonged ailment had vanished, and she felt a new, vital zest and spark in the life she had been near ready to forsake! She now looks and feels ten years younger than before that eventful first day of frozen animation.

All this was last year, and it actually happened.

RIDDLES OF SCIENCE

A MILLION CITIZENS LIVED IN ANGKOR - THEN OVERNIGHT THEY DISAPPEARED WHERE DID THEY GO?



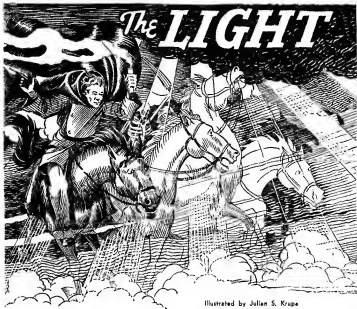
LEGEND SAYS A THOUSAND ELEPHANTS WERE NECESSARY TO CARRY THE INCREDIBLE TREASURE OF GOLD AND JEWELS,



ANGKOR VAT IS A TREASURE HOUSE OF SCULPTURE AND ARCHITECTURE UNMATCHED, EVEN BY THE GREEKS. THIS MANY-ARMED EFFIGY IS A MARVELOUS PIECE-OF SCULPTURE . . .



FAR up in the jungles of French Indo-China, some 300 miles from the doorstep of the world, is Angkor, one of the most puzzling works ever contrived by the hand of man. It represents a culture that must have been far in advance of anything of that day, and must have been virtually irresistible, even in Asia. And yet, for some cause which can only be guessed, the populace walked out of it and never came back. These people were called the Khmers, and their origin is unknown. They ruled a vast empire numbering 30 millions of subjects. But why did the greatest of ancient civilizations, greater even than ancient Babylon, desert its cities, and where did they go? Science is baffled.



Illustrated by Julian S. Krupa

CHAPTER I

The Coming of War

NILES COPELAND knew why she had come, of course. Since he had been in Arboria he had done quite a bit of running around with Magdalaine Avietnes, and it was only natural that she should come to know something of his experiments with solar radiation.

As a Harvard grad, his eyes had feasted on the loveliness of many a model of feminine pulchritude, yet this, he had long weeks ago decided, was the ultimate. She was blonde, very beautiful, and very desirable.

At the same time she was earnest and very perturbed. Her father was a Minister of the Arborian Cabinet and

there were a hundred thousand enemy mobilized on the border. At the moment, war seemed unavoidable.

"Our atmosphere turns back very deadly radiations of light," he went on explaining. "We can easily imagine that ordinary sunlight could be fatal to beings from other planets. However, human beings are immune to ordinary solar rays."

She leaned forward eagerly. "Are you suggesting that they would be fatal under certain specific circumstances?"

"Why not? Any animal, or man, can be sensitized to rays of light, just as a photographic plate is sensitized to certain invisible rays."

"Then you have stumbled on a very dangerous bit of knowledge?"

"I'm afraid I have," admitted the

THAT KILLS

BY J. HARVEY HAGGARD

Niles Copeland hated war, but when the crisis came to the tiny country, he acted. With his science a Fifth Horseman rode the skies of war, more terrible than all the other Four combined.



red-headed young American. "And now, if school is over. . ."

He tried to kiss her, but she held him away.

"You are an American, and sometimes I wonder," she began, and faltered.

"I know what you mean," said Niles, suddenly serious. "And if it comes to that, Magdalaine, I'll do everything I can to help. But you know I hate war and useless slaughter of human beings. So let's forget about it, until there's no other way out. Then we'll talk with your father. Is it agreed?"

Magdalaine Avietnes smiled. When she smiled the rest of the world was very remote for Niles Copeland. He realized now, more than ever, just how much she had come to mean in his life. And he had been in Viedna for but little over four months.

THEY rented a droshky and went driving along the beautiful secluded avenues in the ancient end of the capital. Autumn leaves from stately trees to either side had scattered golden scorched splotches across the cobblestones, and the main thoroughfares of the city were left behind. The driver of the droshky stood high in the rear, with his high boots, long blue coat, with license plate fastened to the back of his collar. His face was wrinkled and aged. He whistled a native tune softly.

It was not like driving through modern Europe, beset with wars and rumors of wars. The droshky was a relic of a bygone age of peaceful days and nights. The clapping of the horse and the soft rattling of carriage tires were a part of this enchanting illusionment, and the ancient dwellings with drooping hedges and sloping lawns were like lovely etchings from the former age of continental gallantry.

But then the serenity was shattered.

Distant detonations rent the air. The ground shuddered. Buildings swayed. The horse plunged in fright and the driver cursed. For a few out-of-hand moments the carriage careened as the horse fought the reins. When the animal quieted they were on the corner of a larger street.

Pedestrians were milling about the street corners, their faces contorted into caricatures by the approach of national conflict. Autos of imported make were drifting to the curb. All horror-stricken faces were turned away from Viedna toward the border, where Krimean troops outnumbered their own army five to one.

A woman cuddled a baby at her breast and began to weep softly. An old man, tottering on a cane, stumbled forward.

"Guns!" he rasped fearfully from a bony throat. "Krimean guns!"

"Dynamite!" snorted a huge burly man with a bald pate. "Arborean dynamite! They're blasting the roads that lead to the border!"

Niles Copeland felt the body of the girl stiffening beside his own. Her face was bloodless, frozen into a mask of startled apprehension. Again a series of detonations sounded, rolling out of the distance like thunder.

In the streets men were shouting incoherently and waving clenched fists. A blare of trumpeting sounded and the crowd was split by a motorized detachment heading for the front.

Word was quickly passed around that troops were clashing on the border. War with Krimea had come at last.

Mobilization was a matter of hours in Arborea. For twenty-four hours the stubborn ranks of Arborea wavered on the outlying villages, and slowly the superior numbers of Krimea drove them back. On the second night the Krims were besieging Belgrone,

situated near a tributary of the river Venida, after intense fighting. It was rumored that a mighty drive would be instituted by the Krimeans on the next day.

ADELBERT AVIETNES was a tall man whose bent posture and faltering step radiated extreme exhaustion. After listening to his daughter's repeated pleas he had come to the laboratory with the Minister of War, a thin waspish man by the name of Friedrich Boibus, and stalwart Captain Voelkel of the National Police Bureau. Their very attitude was that of drowning men clutching at what they knew would be an intangible straw.

"We may be able to develop a terrible weapon to be used against your attackers," Niles Copeland explained, after telling them of the annihilative force of radiations in outer space.

Friedrich Boibus frowned and became coldly aloof.

"Too fantastic," he commented dryly. The wiry little Minister of War had spent the first day at the front, where he witnessed many men going down in useless butchery. His reeling brain would accept nothing so insubstantial as this science-concocted dream, even though it offered a chance at retribution. "I believe we're wasting our time."

"What do you think, Captain Voelkel?" asked Adelbert Avietnes, looking thoughtfully at the third member of the investigating committee. Captain Voelkel, despite his uniform, was a trained scientist, and there was something encouraging in the manner with which he listened to Niles Copeland's plans. He looked up at the American. Their glances locked.

Niles saw before him a very determined and dynamic figure. Despite himself, he shuddered internally. A picture of armies, with soldiers swaying

before the lethal blast of the sun's rays, giving away like wheat before the scythe, came into his mind's eye. Finally Captain Voelkel relaxed, as though he had read the other's thoughts.

"By the devil himself! Maybe you speak truth," he burst out. "I myself have heard of a certain Munich chemist who treated bacteria with a solution—an acridine solution. Bacteria in such a solution will die if exposed to sunlight, but will thrive if kept in the dark."*

"I could duplicate the experiment," said Niles Copeland eagerly, "as well as with larger animals. There is a disease known as *jagopyrism* which sensitizes animals in such a manner that they die from exposure to the rays of the sun."**

"If you can prove that," returned Captain Voelkel, coming to a quick decision, "there will be no argument." The others nodded in agreement.

NILES led them into a small experimental room adjoining the laboratory. A cage containing three guinea pigs stood beneath the sunlight of an open window. From a small compartment he produced a bottle of yellowish crystals, some of which he poured into a watering pan.

Shoving the caged animals into a shaded zone on the table he lowered the pan into the cage. Evidently water had been withheld from the animals for some time, for they drank greedily. Apparently none the worse for the experiment, the small creatures continued to

* This curious discovery was made when Herman von Tappinier, a Munich chemist, sought to test the physiological effect of a certain coal-tar dyestuff, acridine. Such tests are routine with new substances.—Author

** Herbs causing *jagopyrism* are buckwheat, paintroot, St. John's-wort, alfalfa clover, and knotweed. Cattle, pigs, and sheep may feed on these plants with impunity as long as they stay in the shade, but upon coming out into the sunlight they seem to go crazy, dashing about in great frenzy and generally end by finally falling dead.—Author.

feed upon lettuce leaves.

But when he thrust them into the sunlight they died abruptly, horribly. A frenzy seized them, and for a few moments they dashed insanely about, biting at themselves and each other, before their last kicking convulsions subsided and they lay moveless on the floor of the cage.*

For a space no sound was audible save for harsh breathing as the three investigators stared at each other with apprehensive, startled eyes.

Avietnes was tugging at his leathery cheek.

"That is all very well, with the guinea pigs," he said at last. "But with men—your problem is different."

For answer the young American spread a map across the table.

"There is your answer," he countered, indicating red lines marked with crayon. "The Krimean army is besieging Belgrone. Its only water supply, as you can see, is furnished by a tributary to the Venida river. My problem is breaking through the Krimean lines and polluting the water to the rear. A fast horse can carry enough *Hemothasia* crystals across the pommel of the saddle to taint the entire river. I might add that these tiny crystals can duplicate themselves and form other similar ones in the calcium content of the water."

The waspish little Minister of War

*A colored substance obtained from blood, *hematoporphyrin*, is fatal to white animals in sunlight. If it is injected into a white mouse it is all right as long as it lives in the dark. Upon being exposed to the sun the mouse shows signs of extreme irritation, shuts its eyes and sinks into a comatose state, from which there is no awakening. A German physician, Fritz Meyer-Betz, injected *hematoporphyrin* into his own blood, proving subsequently that exposure to sunlight would be fatal for humans as well.

Niles Copeland had experimented along the same line, producing a herb derivative in the form of a yellowish powder, *Hemothasia* Crystals, which achieved the same result through the digestive tract.—Author.

was nodding vehemently, tapping on the table with a pencil. His eyes narrowed and the curve of his mouth melted to a straight line. His narrowed eyes seemed to be visualizing the future.

"Pigs dying. And men. And whole armies!" he was murmuring. "Yes, ah yes. You shall have a horse, my dear young American, the fastest horse we have. And tomorrow, tomorrow when the enemy have awakened and drunk deeply, then other horsemen shall ride. The Four Horsemen of War will be in the saddle, flashing across the blazing sky, and if all goes well—"

"A fifth horseman will ride by their side," interceded Niles Copeland grimly.

"Eh?" ejaculated Friedrich Boissus questioningly. "A fifth horseman?"

"A fifth horseman," repeated the other, "bearing in his hand a scientific weapon of such horribly destructive powers that the others will not dare to ride."

CHAPTER II

Mission Into Danger

CAPTAIN VOELKEL went immediately to give orders that a motor car be made ready for the trip to Belgrone. While Niles Copeland was making preparations he caught a glimpse of his reflection in a wall mirror. His face was haggard and gaunt. He was hungry, and couldn't remember how long it had been since he had eaten. Glancing down at the reddish stubble of his beard he decided that he needed a shave. But then, there wouldn't be time for that. His eyes met their own perplexed glare in the image.

"So, Niles Copeland," he muttered speculatively, "you are the man who hated war!" But he wasn't afraid, and he was glad of that.

Captain Voelkel was not long in returning, ready for the trip. He was

breathless with news from the fighting zone. Along the frontiers, the armies of Krimea were moving slowly, for the war equipment they were amassing before Belgrone was heavy. New monstrous projectors were wheeled up from distant Krimea by caterpillar tractors, sheathed against possible barrages, and an overwhelming battery was hidden along the river banks.

Since hidden mines had destroyed the Arborian roads before the invaders arrived, making them impassable, progress was slow, even though the defenders were being wiped out and driven back in a telling guerrilla fire as fast as the invading army could march. On the morrow, the assault and capture of Belgrone would be attempted.

A big armored limousine waited at the curb. Niles Copeland followed Captain Voelkel down the gloomy steps where a single muffled lantern lighted the way. Around lay a dark, invisible city, for Viedna had doused all lights against the possibility of night raiders. As he was about to enter the car he saw a very touching sight.

Magdalaine Avietnes stood by the running board. Around her in the darkness were many elderly women. Voices were being raised in humble prayer. News of his coming attempt to save Arboria had been handed from mouth to mouth, woman fashion, and now sweethearts and mothers had come to wish him godspeed.

The gears clashed and the big car glided away. Magdalaine's gloomy silhouette as she stood with her handkerchief pressed to her mouth, faded away into the receding darkness.

Adelbert Avietnes sat in front with the chauffeur. Friedrich Boisus and Captain Voelkel were in the rear with Niles Copeland. Two leather saddle-bags had been stuffed with the hemostasia crystals and locked in the bag-

gage compartment.

LESS than an hour passed. The black, unlighted structures of Belgrone jutted out of the darkness. Sentries challenged them, and passed them on as quickly as the officials were recognized. The few dwellings Niles could glimpse were widely separated and he felt that they were only skirting the town proper.

The limousine stopped by a low structure from which the sounds of stabled horses emerged.

An order was given and soldiers transferred the saddle-bags from the baggage box. Niles Copeland found himself suddenly alone with Captain Voelkel. Two giant black horses were tied to low shrubs.

"I don't understand," began Niles lamely.

"Don't be a fool, American!" spat back Voelkel with a short laugh. "I know this country and you don't. It would be foolhardy for one brave man to die alone in a foreign country."

The red-head grinned in the darkness. He remembered the long silent gaze Voelkel had given him, back in the laboratory, and realized that the Arborian was a man of his own caliber.

"And what if two men die alone?" he queried, loosing his horse and swinging into the saddle.

"Then it's their own fault!" snapped Voelkel, reining his own charger in close. A dark hand was thrust out. Niles felt cold metal against his own and took the revolver wordlessly, placing it under his belt. An ominous gurgle rattled from the black. The night wind brought a fragrance of brandy to the American's nostrils.

"Well, Voelkel," he snorted. "As long as we're getting acquainted so well, don't be a damn pig! Remember that the Americans are very thirsty people."

Voelkel laughed good naturedly and

complied. The fiery liquor was quite bracing. He flung the empty bottle into the gloom and heard it rattle on a stone.

From the black the Arborian said, "You *must* have been thirsty! I'll have the next drink on you. *After* we get back! It's past ten now. We'll have time to get through the lines, and back by dawn, provided there's no interference. I'll lead the way. You follow."

THEY rode along a dirt road for a time. Arborian outposts barred their way at intervals, were passed after a few moments of whispering with Voelkel. At last there were no more sentries. They were in a wooded section. The night was dark, and only a few stars twinkled far overhead.

Once Voelkel paused while he dismounted and cut the strands of a barbed wire fence. Someone had been thoughtful enough to include wire nippers with the saddle equipment.

They traveled in a wide circuitous route, hoping to avoid the main encampment of the Krimean army.

It was after midnight when Voelkel drew up his horse and allowed Niles to come up alongside.

"We're in dangerous territory, Yankee," he said, "but luck is with us. The sky is cloudy and will blot out the moon, which has already arisen. Damn!" For his horse had snorted suddenly and was looking alertly ahead. From the blackness came an answering whinny.

"Get going, you blasted bag of bones!" hissed Captain Voelkel, just as a challenge in the Krimean language rang out. Applying heels to the flanks of their mounts, they galloped away into the night. Flashes of fire made pin-points in the night. Bullets whistled through the leaves and past their ears.

"Don't answer their fire!" commanded Voelkel tersely. "It'll only give

our position. Besides, they'll not hit us at such a range in the darkness. Our best bet now is to ride hell-bent for the river, which can't be far."

A stiff wind had arisen, rustling the leaves and serving to make the sound of galloping hooves upon soft turf more inaudible. They could hear horses crashing through underbrush from behind, but the pursuit must have gone off at a wrong tangent entirely. What Krim could have thought a fugitive fool enough to be riding directly away from Viedna?

But they had hardly had time to draw a breath of relief before other gun-fire began jetting out of the black from every direction. They could hear men shouting sleepily. In the patches of flame they made out segments of tiny tents. Unknowingly, they had ridden pell-mell through a sleeping camp, which had been darkened for the same reason that Belgrone had, for fear of night bombers.

The American had an impulse and couldn't resist it. Standing high in the stirrups of his plunging steed he loosed as terrific a Comanche war-whoop as any ever set free over American frontier by a naked savage.

"Poor devils!" laughed Voelkel a few minutes later. "They didn't have a chance. You scared them to death!"

THIS time pursuit was inevitable.

The Krimeans must have glimpsed them vaguely and would know their general line of flight. The slope gave way before their horses without warning, and wet vines dragged like snakes across the American's face. The horse plunged down a soft slope and he heard its legs threshing in shallow water. His heart leaped.

"Well, Yankee, we're here," came Voelkel's voice grimly, "if that means anything. And we're trapped too, if

those dumbheads have brains enough to spread out a little."

Niles Copeland undid the saddle-bag with feverish haste. His fingers felt like they were all thumbs. At last he jerked a catch free and felt the tiny crystals sifting through his fingers. There was a watery plop from below when he flung saddlebag and all into the unseen aqueous depths. An answering echo came from downstream. A tremendous burden slipped from his mind.

His horse was safe on dry bank when Voelkel had a bit of bad luck. The man's mount had become tangled in a bed of driftwood and made a tremendous lot of noise as it tripped and splashed heavily back into the river. At the same time a flash of light pierced the night from higher up along the bank.

Niles seized his gun and shot at the flash. He missed the light but it fell of a sudden, spinning out and rolling down the bank into the rippling edge of the waters.

The other horse was under control now and it reared out of the water dripping.

"Good Lord, Yank!" ejaculated the Arborian. "That was shooting!"

The man had been sitting his horse on the edge of the bluff, and the bullet had drilled him almost squarely through the heart. Niles Copeland felt nauseated suddenly. He had killed a man! That the man had been about to try the same thing on him didn't matter. The battle-trained horse stood calmly, with its master dead beneath its feet.

Pressing in closely, Voelkel clubbed his own gun and dealt the horse a heavy blow over the head. The horse wheeled around, shrieking with pain, and charged blindly into the night, making a commotion as it crashed headlong through the river brush.

Turning their horses in an opposite

angle they rode away as rapidly as caution would permit, making a much vaster circle about the Krimean encampment.

CHAPTER III

The Krimean Advance

SOME time later, tired but unscathed, they were back in the Arborian lines. Several hours would pass before dawn came, and now the most trying ordeal of all came, for there was nothing to do but sit and wait for what morning had to bring.

Intermittent firing was heard all through the night, and in the late hours Belgrone suffered an air raid that didn't do much damage. When the first rays of dawn lightened the eastern sky it was apparent that the low-hanging clouds, having acted as a godsend the night before, were still gathering, and might prove a Nemesis for all of the American's plans. It was nearing the rainy season at this time of year, and the storm-gods seemed bent upon stirring up a howling tempest.

Cloudy daylight was streaking up across the stars when the Krimean troops poured in a living stream up the banks of the Venida, and a hellish roaring of weapons resounded in the outer harricades. In a moment the outer guarding squadrons lay, mangled and bloody, to be occupied by charging Krims.

Bayonets glittered under the lightening firmament of space. Wheels rumbled. Tanks glided forward. More tanks came into formation. They were like lean, alive things of metal. Airplanes thrummed against the skies. Men moved forward. Piked helmets were like fields of nodding wheat. Red-rimmed eyes glared through acrid smoke.

The trenches at the outskirts of Belgrone suddenly belched forth men. The

Arborians were going over the top. The pandemonium of battle fray was hideous. Men were screaming and falling everywhere, but the sound of their voices was swallowed in the thunder of guns.

The Minister of War paced savagely across his inner sanctum in the Military Headquarters. Niles Copeland lounged on a desk, smoking a cigarette. Every minute was an aeon of torture. The wiry little Boisus couldn't keep still an instant, and every time he turned he glowered threateningly at the red-headed man who was containing himself with forced composure. In his disappointment, he might as well have accused Niles of betraying them.

The sound of furious fighting came to their ears. An airplane was humming dangerously close. Through the window, a building on the skyline burst into flame. Then a sound of hobnailed feet came, running on cement. A door was thrust inward.

A sergeant reeled in with one leg that was gouting blood. "Quick. Our outer defense is crumbling," he gasped. "We must move up the reinforcements, the general says, or—"

"Too late to retreat!" stormed Boisus. "Follow up with the main bulk of the army from Viedna and pass word to send the women and children back to the capital."

His aide disappeared to carry out the message and Boisus spun around to confront the American. "There!" he shouted. "That's what your damned scheme has done for Arboria."

His bitter words choked off. Stripping the gloves from his hands he swung them, dealing the American a stinging blow across the face and stalked out of the room.

AS the murky morning progressed with hideous agony, fierce fighting

continued unabated. Most of the women and children had refused to leave, declaring they would rather die with husbands and kinsmen. Though this seemed a needless sacrifice, Boisus was shrewd enough to realize that it would tend to boost the morale of overwhelmed numbers. Now his men would fight like rats in a trap.

Around noon Captain Voelkel appeared, bloody and tattered. He had been taking an active part in the battle. The national police had formed a unit of their own, but it was plain to be seen by the gloom in his smoke-blackened face that most of his men had been wiped out.

He placed a hand on Copeland's shoulder, pulling him around.

"Sorry, Yank," he said crisply. "But it didn't work."

"If only the clouds—" snapped Niles savagely, clenching his fist disappointedly. Captain Voelkel was shaking his head sadly.

"American, believe this. I am your friend," he avowed. "I've been in the front and heard the men talking. They're fighting like mad beasts out there, and they'll do bestial things. I'm telling you this for your own good. If the line wavers, don't be around."

When Niles looked up Voelkel was gone and a new figure was in the doorway.

"Magdalaine! What are you doing here?"

"The women of my country," returned the girl simply, "die at their men's side. And I have come to be with you." She came toward him as though seeing him in a new light for the first time.

"Better go back," Niles burst out bitterly. "You heard what Voelkel said."

She nodded and her eyes were moist. "Poor fools! You must not blame them too much, Niles. It was like a last hope,

too good to be true. A deliverance out of heaven. And it failed. Now they're bitter and unreasoning."

"I suppose they're right," muttered Niles gloomily. "They could have retreated to Viedna for a last stand. Many lives would have been saved. But I'm not a coward. I'll face the music."

A TERRIFIC bombardment of shells rocked the town toward evening. And then, just as the clouds rolled away for a long moment before sunset and the golden rays of a setting sun fell full upon the combatants, a vast hush came over the battle field. Thunder of cannon ceased. Spiteful crackling of the sharpshooters was last to die away.

For a few short minutes the sun broke through, then was gone, and the western sky was tainted with deep crimson, the same deep crimson of blood that stained the shambles below. A low savage snarling arose along the trenches. Now men could die knowing that the American had pulled a boner. The Krimian troops had resumed fighting with renewed vigor, obviously unharmed.

Near eleven o'clock, Captain Voelkel was brought in on a stretcher. A bullet had passed through his chest, narrowly missing his heart.

"In the back," he whispered, rolling his eyes in agony. "They shot me, in the back! The idiots! They think we are traitors!"

After the outburst his anguish was borne in stoic silence, and when the American tried to comfort him, his face turned and looked at the wall.

They were in a makeshift hospital, where the wounded and dying were being brought in. Everywhere Niles went men cursed him, shouting imprecations that only added to the horror of his dazed mind. At last he could bear it no longer. He jerked the gun from his belt.

"Were yu' goin' somewhere?" a voice growled. He looked around and saw wounded men, crawling upright on the strips of bedding like lobsters. A smirking soldier occupied the doorway, with one bandaged leg-stump dangling and blotted with crimson. A bayonet edged forward from his smudgy paws. "Yu dirty devil! Tryin' to sneak out. Yu're stayin' here. We're all stayin' here. That right, boys? Maybe we ain't all here, but what's left can keep you bottled, and if we die, we don't want to be lonesome, see?"

Savage snarls echoed from twisting lips. No use to tell them he had intended going to the fighting zone.

An unsympathetic surgeon stepped up and jerked Niles' gun from his grasp.

"You heard what they said," he growled with a smirk. "They're my patients, and I don't want to have anything disturb them."

"My father—" began Magdalaine.

"Yu'll stay here too, miss," leered the soldier, eying her up and down contemptively. "We've got to get some pleasure out of this war, worth dyin' for."

Niles quieted the girl as best he could. He could tell by the twisted expressions upon the circling faces that pain and desperation had combined to lower their minds to the very verge of insanity.

SHORTLY past midnight, an aerial battle was held directly over the city. Blazing edifices from the burning city lent a ghastly illumination to the planes as they darted and plummeted across the heavens. The valiant Arborian fliers went down, one by one, cutting crazy streaks across the sky and crashing downward, breaking apart upon collision. The remnants of a tiny nation were fighting with the courage and valor of Horatio at the bridge.

The one-legged soldier stood in the doorway all night, whetting his bayonet

on his shoe and muttering to himself. Though he watched Niles from narrowed glittering eyes, he seemed oblivious of the battle that was raging outside.

Voelkel was delirious. He had awakened several times, threshing about and fighting a battle with invisible opponents. At last his words were rational.

"Dawn," he muttered. "Is it dawn?"

Niles went to the window. Daylight was streaking through. Overhanging clouds had hung on relentlessly and were mantling a sombre and shaded day.

"Dawn!" echoed Niles in a hopeless tone. "I wonder if it's dawn, or dusk." His last hope was gone.

Magdalaine screamed abruptly. Throughout the night she had helped with the nursing. A signal had been given and those of the wounded able to move were closing in about them. The booming of cannons was closer now, as though it were rapidly drawing nearer.

The one-legged man hopped forward, with bayonet extended. Niles backed away, stumbled over an out-thrust arm. A scrawny claw reached up from a cot, grasping for Magdalaine, but succeeded only in ripping away a large strip of her dress. Niles edged away slowly. This sector of the emergency hospital was all at once oddly without attendants. There'd be no help from that quarter.

The blade slashed out and the American ducked, watching for an opening. The second thrust caught his forearm at the end of its stroke, cutting a gash below his elbow. Hot pain flamed along his arm.

"Watch, Niles, the—"

He could have knocked the soldier down then, for the glazed eyes were peering past the American, out through an open door. Slowly the clutching fingers relaxed and the bayonet clattered

to the floor. An expression of amazement replaced insane blood lust. The soldier graped for the door and pointed.

THE hot glare of a morning sun was beating down over a city that was almost in ruins.

In a tumultuous wave, the uniformed masses of the Krimean army avalanched in toward the town, lances and pennons streaming in the wind, mouths open to scream victorious things that went unheard in the holocaust aroused by advancing batteries.

Yet something strange and macabre was transpiring. As the sunlight shot down squarely into the face of the invaders, the vanguard wavered. Guns came clattering down. Hands were reached up to clutch throats. Bulging eyes were peering about, expressive of intensive pain. The rays of sunlight had transformed them.

Helmeted soldiers began fighting among themselves like insane wretches, and everywhere, men were crumpling to the ground. The sounds of firing gradually lessened, and the entire army of Krimea appeared to be scared by some invisible caustic breath of annihilation.

Airplanes went plummeting, unpiloted, toward the rooftops. Tanks were lurching into strange positions, or were running about like berserk things, crashing into walls and fences, with nothing to guide their errant paths.

"Victory," murmured Niles Cope-land, but it seemed empty enough, even now. Yet there would be a difference. Other wars had plunged civilization backward. This one would be a step forward.

As though an unseen blast had swept them, the Krimean ravagers lay, completely wiped out by the kiss of death. It was a strange scene of battle lying there beneath the rays of an avenging sun. The Four Horsemen of War no

longer rode the blazing skies with phantom steeds. A new Fifth Horseman, clad in the shining armor of a new science, rode alone in the radiant heavens, carrying in his hand a weapon which no man or beast would ever be able to defy.

Amid the dazed silence, Niles stood

with Magdalaine, feeling a strange awe. At last they thought of going back inside and telling Captain Voelkel the good news. And there was no doubt as to how the Arborian would take the glad tidings.

THE END

NAVAL OBSERVATORY TIME

Standard time at the United States Naval Observatory is reckoned on the basis of transit observations of the stars. There are three electrically wound standard clocks in the Observatory, running in a vault kept at constant temperature, and sealed at a constant atmospheric temperature. Meridian circle observations are taken of the stars selected for this purpose, on clear nights. Checking from these observations, the errors of the standard clocks are determined and corrected.

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The Phantom

By MORRIS J. STEELE

From beyond the hull, where no living thing could be, *IT* whispered madness

CHAPTER I

An Uncompleted Message

LEO POWERS, radio operator of the space ship *Red Star*, shifted his powerful, six-foot body, encased in sleek, supple, velvet-soft leather, lifted his lean, lanky limbs to a position of rest, fastened his dreamy blue eyes on his instruments, and casually pushed back his shock of unruly red hair.

As if in answer to his attention, the green flicker of an incoming message began spelling out its bright flashes from the neon tube receiver. He shot his wiry legs to the floor and sat bolt upright in his seat. Grasping his pencil with one rapid motion, he slid a pad beneath its point.

"Attention *Red Star*! Calling *Red Star*!" quivered the neon tube. Spaceways Police warn of approaching danger. Nature not yet determined. Use caution upon entering Martian area twenty—"

Unnaturally, the rapid gleam of the neon tube dimmed, faltered, flared up momentarily, then darkened altogether.

"Sputtering rockets!" exclaimed Powers in exasperation, jumping to his feet. Quickly he snapped open the inspection panel of his set and glared at the dully glowing tubes. Nothing wrong there. A glance at the volt meter



gave proof of sufficient power feeding the receiver.

An expression of surprise spread across his freckle-bronzed face. "It's not my set," he muttered, "It's the main office that's gone dead. And right in the middle of an important message, too! I'd better notify old man Nathan right away. Must be something seriously cockeyed somewhere."

Snapping the inspection panel back into place with a supple flick of his fingers, he affixed the automatic recorder in the event that the message was re-

Enemy



The lookout man grasped the gun and leaped back against the wrecked control board

sumed during his absence, then maneuvered his broad shoulders up the narrow corridor toward the control room.

The *Red Star*, commissioned to transport a valuable cargo of radium, carried a picked crew of five officers, Earthmen, and eleven Martian space sailors (Martian because, although sometimes considered untrustworthy, they were unsurpassed space-men—best in the solar system—and willing workers), had left New York some twenty-two million miles to the rear.

As Powers made his way down the corridor, he meditated on the presentiment that had preceded his acceptance to his post as radio operator of the *Red Star*. The voyage would be a dangerous one, rumor had said. Utmost secrecy had been maintained concerning the cargo and the sailing time, but it was considered very likely that trouble might occur.

Radium cargoes, because of their tremendous value, were shipped with elaborate caution, but in spite of all precautionary measures, there had been many "leaks" in the past. Shipments had been lost, waylaid by pirates.

"Bloody" Mose, most famous of the space raiders, was reported to have successfully sacked the last two ships. And horribly, he never left a victim alive. Utterly ruthless, it was his boast that he got what he went after and left no clues, no witnesses. If he knew of this shipment, he would certainly try to get it. Did this strange message with its abrupt termination mean that the feared raider was on their trail?

Climbing the ladder at the end of the corridor, Powers saw above him the broad, space-tanned, white-whiskered face of Captain Nathan peering down at him, an attitude of questioning in his short, massively powerful body.

"What's up?" he asked in a surprised tone.

"Message from the main office warning of danger, sir," replied Powers, swinging himself up beside his bushy-browed commander.

Captain Nathan's face darkened, emphasizing the whiteness of his high-set, bushy white hairline. "Danger?" he repeated in annoyance, "as if I didn't have enough trouble right now with that woman passenger and a superstitious crew. What's it say?"

"It isn't complete, sir," said Powers quickly as the captain took the penciled message from him. "The signals flickered and went dead right in the middle. I inspected my tubes and power and they were all eighty-seven. The main office went dead, sir."

"The devil you say! That's the first time in years that the Earth-Mars beam has failed. Must be something up."

He read the message slowly. "Is this all that came through?"

"Yes, sir," replied Powers.

"Contamination! Just one more word and we'd at least know where to look for the danger. We're in area twenty-three right now and to be sure we don't blunder into something, it means we'll have to keep a close lookout for nearly six million miles."

Captain Nathan strode to the call-board and yelled into the lookout cubby speaking tube. "Carleton," he shouted, "come here a minute."

Again he inspected the warning message while he waited for the appearance of John Carleton, tall, earnest-faced lookout man, who alternated with Michael Burns, the other lookout. The annoyance on Captain Nathan's face deepened and he slammed the message savagely down on his desk.

"Always *something*!" he muttered in exasperation.

CARLETON entered with mute question on his serious, brown-eyed fea-

tures. "You called me, sir?" he saluted, snapping dapper fingers to brown-haired temple sideburns.

"Yes. We've just got part of a message warning us to be on the lookout for some sort of danger. You know what that probably means! Bloody Mose. Keep a close watch during your stretch and give Burns the same orders when he relieves you. At the very first sign of anything unusual, report to me without delay. In an emergency, use the lookout manual controls to avoid the danger. That's all."

Carleton saluted again with a momentary air of hesitation, of doubtfulness. Then: "Yes, sir."

Wheeling, he crossed the room to a tool chest and removed a clean cloth and a can of cleaning fluid.

"What are you going to do with that?" asked Captain Nathan.

"The lookout port seems to have become smudged, sir, and I'll have to clean it."

"Smudged? From what?"

"I don't know, sir. The vacuum between the lookout plates is okay and the glass isn't cold, so it can't be condensation. It might be that the humidifiers aren't working right."

"All right, whatever it is, clean it off and keep that cloth with you. By all means be sure to maintain clear vision. I'll check on the humidifiers."

As Carleton nodded and disappeared down the corridor, Captain Nathan swung himself heavily into his cushioned seat. "Hang it!" he exclaimed in disgust, "I wish I'd never been assigned to this trip. It's proving to be a regular heaviside!"*

"Has anything else gone wrong, sir?" ventured Powers.

Captain Nathan snorted through his

white moustache. "Has anything else gone *right*, you mean! First, the woman passenger comes aboard at the last minute and delays our start; then the crew gets rambunctious and demands that we land at Luna and take on another hand to make our complement eighteen—those superstitious Martians claim seventeen is bad luck!—and now, Larson, the engineer, has gone batty. Claims to hear voices outside! Of all the twaddle! But he keeps it up, and I'm afraid he'll stir the crew to mutiny with that 'whispering voice' stuff. Why he even had one of the crew believing he heard voices too, this morning!"

"Why not clap him into irons for a few days?" suggested Powers. "We won't be using the main fireworks* for several weeks."

Captain Nathan twirled his large thumbs rapidly. "I threatened him with that very thing."

"Didn't it have any effect on him?"

"Almost too much. He nearly went crazy—dropped on his knees and begged me not to do it; if you can picture that long-armed, tow-mopped Swede begging—. Babbling something about not wanting to die in chains without a chance—" Captain Nathan paused, his body in an attentive, puzzled attitude of listening.

"Say, do you hear anything?"

Powers listened obediently. "Why no . . ." he finally said doubtfully. "What do you hear?"

"Thought I heard a call. Gosh, I'm getting batty myself! I'll be blasted glad when this trip is over."

"By the way," queried Powers, "who is this woman passenger anyhow? I haven't seen her yet."

Captain Nathan permitted a smile to flit across his face. "Then you've

* Heaviside: a jinx, an unlucky circumstance; from the Heaviside Layer, which blankets radio waves from Earth.—Author.

* Fireworks: rocket tubes, so-called because of the magnificent display caused in space by rocket gases spreading out for miles.—Author.

missed something," he said. "She's all eighty-seven! Pretty as a picture, blue eyes, silver-blond hair, a figure like a Cleopatra, dainty, but not a weak sister, and looks mighty capable too, take it from me. Name's down as Vera May Reynolds, and she's the owner of our cargo, which accounts for her presence."

"I'd wondered about that," commented Powers.

Captain Nathan ignored the interruption. "Comes from New York, I understand; the upper crust, born on the top-level. She's—" again Captain Nathan paused and listened intently.

"Now I hear it *too!*" cried Powers excitedly.

Captain Nathan grunted and frowned. "You do? What's it sound like to you?"

Powers strained his ears mightily in the silence, the hair on the back of his neck rising strangely as his senses picked up a weird, whispering sibilance that seemed to come from nowhere. "Sounds like someone talking behind a closed door or something. Kind of muffled and indistinguishable. I can't seem to catch any definite words."

Captain Nathan stirred uneasily, then jumped irately to his feet. "Hang it all!" he roared, his gruff voice booming out in sudden anger. "We'd all be daffy if we let our imaginations run away with us like that. Get back to your post! Of all the unreliable young whippersnappers! As easy to influence as a puppy. Get out of here before I hear you hearing a brass band!"

Powers saluted sharply and made a hasty exit from the control room. As he made his way down the corridor outside, he wiped his forehead.

"Whew! No wonder he's called 'Old Thunder.' Just as nice as pie, and then, all of a sudden—*bang!* But just the

same, I *did* hear something, and he did too, the old thunderer, only he wouldn't admit it. He never admits anything he can't understand, or explain."

BACK in his cubby, Powers glanced at the indicator. "Still dead," he muttered.

Staring musingly at the lifeless neon tube, he seated himself in his operator's seat and cogitated on the mystery of the unfinished message. It had warned of danger, but what kind of danger, and where? On impulse, he rose to his feet and crossed to the port. It was white and opaque and outer space was no longer visible.

"What the dickens!" he exclaimed. Quickly he passed his hand over the smooth surface of the glass. A look of bewilderment crossed his features. "It's not frost!" he muttered in astonishment. "It's *outside!*"

The eerie sensation that sweeps over one when confronted with the unknown, covered his body with prickling goose-pimples. For a moment he gazed at the mysteriously opaque port. Then he froze in his tracks and the hair on the nape of his neck stiffened. Unmistakably there came to his ears a murmuring, whispering sibilance as of muffled voices. *And it came from outside!*

Outside something was whispering—something—weird, horrible, its form bidden behind mysterious, baffling whiteness. For a moment blind, unreasoning terror filled him. This wasn't *sane*—wasn't *possible*—and yet—?

Although he strained his ears until the blood pounded in his temples, he could detect no single word in the uncanny whispering.

Then, startling him with its unexpectedness, a cool, deliciously accented, girlish voice caused him to whirl in astonishment, shocking him back to sanity and normalcy. At the entrance

to the cubby stood the woman passenger, her blue eyes smiling at him, her silver-blond hair glowing about her head in the rays of the corridor light like a halo of moonlight.

"My port is like that, too," she informed him.

Powers stared at her in astonishment which gradually lent itself to admiration and finally became unqualified approval. Then he flushed redly as he came back to a sense of propriety with awareness of the delicate pink blush that was slowly suffusing her neck and cheeks. He hastened to apologize.

"A thousand pardons, Miss Reynolds. I hadn't expected to be treated to such a vision of loveliness just now."

"I shall have to be more careful hereafter," she said, then wrinkled her nose saucily. "How do I look now?"

He grinned frankly, delighted with her impulsiveness. "Much lovelier!"

She blushed hotly now and hastened to change the subject. "What sort of a vision were you seeing when I came in? You were staring at that frosty port as if you'd seen a ghost."

"I'm not so sure I haven't heard one," he replied seriously. "But that port's not frosty. It's the outer glass that's affected."

"But how could that be?"

"I don't know. But if you don't mind, we'll go to the captain and report it. You say your port is the same way?"

"Yes. I was on my way to the captain, took the wrong corridor, and landed here instead."

"I hope you get mixed up often," ventured Powers as they proceeded down the corridor.

She smiled. "Maybe I will, if you promise not to stare at me again."

"I'm not a superman!" he grinned, and she reddened once more.

They came to the ladder and paused as an irate voice came plainly down

to them.

"Hang it all," burst out the gruff, burring tones of the captain's voice. "What in damnation is going on here? Weird whisperings, mysteriously obscured ports, half completed messages, failing beams, and the Lord knows what else. . . .!"

Captain Nathan stopped his tirade short as he discerned Miss Reynolds. In his effort to calm himself, he gave an excellent imitation of a ruffled rooster.

"I beg your pardon, Miss Reynolds," he began stiffly, but thawed to joviality immediately under the influence of her acknowledging smile.

"Any further message?" he barked at Powers.

"No sir," replied Powers. "I came to report that my port is completely obscured by some outside condition. The outer glass seems to have become whitened as if it were frosty, but it isn't frost because it's on the outside. I'm sure of that. Miss Reynolds wanted to report the same thing and stumbled on my cubby, so I brought her along."

"You would," Captain Nathan smiled grimly, "you young rascal, and catch me right in the middle of a tantrum."

"I just love tantrums," interjected Vera teasingly. "And now, if you don't mind, I'll return to my cabin. I can see that you gentlemen have important things to discuss."

CHAPTER II

Mystery—and Terror

AS she disappeared down the ladder. Captain Nathan exclaimed: "Important things! I'll say they are important. Here we are, flying blind, radio dead, an unknown danger near and no way to avoid it without knowing

what it is, a mutinous crew, a crazy engineer; and to cap it all, I haven't the slightest idea of which way we're going, or how fast. None of the indicators give sensible readings, when they give readings at all! The whole damn works has gone heavyside!"

Carleton, who had been standing silently the while, eyeing both men with a peculiar expression in his brown eyes, stirred uneasily. "We haven't enough fuel to maneuver about if we get too far off our course."

Captain Nathan nodded his grizzled head moodily. Suddenly he stiffened and listened intently. A thin, hissing sound became audible, and he leaped to the instrument board in consternation.

"Air escaping!" exclaimed Powers, grasping the meaning of the hissing.

"No! The air lock!" gasped the captain. "Someone's opening the air lock!"

Diving forward, Powers leaped for the ladder and scrambled down, followed immediately by Carleton and the captain. With apprehension beading his forehead with sweat, he raced down the corridor toward the airlock and stopped short for a second at the scene that met his gaze.

There, before the complicated door, stood a group of six big-chested, red-skinned Martian space sailors, members of the crew, clad in their simple leather trappings which revealed their strangely hairy bodies. At their head was the Swedish engineer, who was gesticulating wildly, and silently. Grasped tightly in the rough hands of two of the mutineers was the figure of Miss Reynolds. One of the Martians held a big hand over her mouth to prevent her screaming.

With a shout Powers advanced swiftly. The engineer and his cohorts whirled about to confront him. The

little pig eyes of the sandy-haired Swede were narrowed to insane slits and murder blazed in his leather-skinned face. It was evident that his weak mind had snapped altogether under the strain of the uncanny whispering, which he seemed to have heard first, and who was first affected by it.

Abandoning their silence now that they were discovered, the swarthy mutineers shouted dire threats while the engineer whipped a knife from his boot.

"Drop that knife!" Powers' voice held a maddened snarl at the indignity placed upon the beautiful Vera Reynolds as he faced the madman.

For answer the engineer leaped forward with leopard-like quickness. But Powers was ready for him and dodged to one side, drawing his automatic. The engineer whirled and came again. Once more Powers dodged.

"Drop that knife, Larson," he repeated warningly. "I don't want to kill you, but I will if . . ." He leveled his weapon directly on the man's chest. He became aware of the captain and Carleton standing beside him, automatics also leveled.

The engineer halted at this new threat, breathing heavily.

"Take your hands off that woman!" barked Captain Nathan, flourishing his gun meaningfully toward the Martians.

Sullenly, showing their racial cowardice under the threat of the automatics, the six members of the crew obeyed, and in a moment Vera stood behind the three officers, rearranging her disordered dress.

"What about the voice?" Larson's beady eyes narrowed to slits as he glared at his helpless cohorts. "Do you fools think that we'll ever get to Mars while the voice whispers?"

"But what can we do?" whined one of them.

"Do? As the voice tells you. Put the woman outside!"

The engineer waved at the three behind the leveled automatics. "Ask them," he snarled. "Ask them—they don't know what to do. We're blind—we don't know where we're going—and if we keep on we'll be lost in space. I'm the engineer, and I know that we have barely enough fuel to make Mars, provided we don't get false readings. We *are* getting false readings, and they'll continue that way until the voice is satisfied. It's your lives or hers!"

The men stirred and Powers watched them anxiously. The situation was tense. Would they attack?

"Make a move and we shoot!" promised Captain Nathan grimly. "And you'll die a damn sight faster than your silly voice can kill you. You men had better get back to your posts and forget that clap-trap. As for Larson, clap him in irons."

Larson whirled to the Martians. "Fools!" he shouted. "Listen!" He lifted an arm. "None of you are deaf. Listen to the voice. You can't argue against something—*out there!* Listen to *It* whisper!"

UNCONSCIOUSLY Powers held his breath and listened, as did everyone else. Clearly, unmistakably, but still namelessly indistinguishable, the weird whispering was audible. It was as though the ship were surrounded by murmuring shapes, horrible mewing corpses, clamoring almost silently for admittance.

In spite of himself, Powers felt an awful fear grip at his vitals, and beads of sweat stood out on his forehead.

Captain Nathan snorted, and the men jumped, as though released from springs.

"Imagination!" he roared loudly. "You're fools to permit anyone to play

on your senses like that. I don't hear anything."

But Powers' heart sank at the forced loudness in Captain Nathan's voice. It was an effort to drown out the whispers from outside. It was as good as an admission that he *did* hear. The crew detected it too—they knew that he lied even as he spoke—and the engineer saw that they knew. His lip curled in triumph.

"He's a liar!" he shouted. "It was the voice, and it said we'll all die, unless—we *put the woman out alive!*"

Powers shuddered. It was a terrible fate the demented engineer demanded. Death in empty, burning, searing space was an infinitely horrible death—a death that left its victims unrecognizable. He gripped his gun firmly in his clenched fist.

But even amid the tenseness of the moment, no one was prepared for the unbelievable quickness of the terror-ridden Larson. Like a flash of lightning his knife darted through the air and before the astounded group knew what had happened, Carleton sank to the floor with the haft of the weapon protruding from his chest.

Then hell broke loose.

Maddened by the weird whispering and roused by the sight of blood, the ignorant crew surged forward. Powers fired twice before he was flung from his feet, amid a wild melee of flailing bodies. Vera screamed and he heaved mightily at the body of the man who lay atop him. A gush of blood from a bullet wound in the man's throat dyed his uniform red, and he scrambled to his feet a gory sight, staggering clear of the struggling forms.

Quickly he took stock of the situation. Carleton lay gasping on the floor with a writhing mutineer at his feet. Two of the crew wrestled with Captain Nathan, and two others lay dead, killed

by Powers' first rapid shots.

He had only a minute fraction of a second for this observation before the sixth mutineer leaped upon him. A stunning punch from the man's heavy fist dazed him for a moment. He reeled back. Lurching forward again to the attack, he slipped on the bloody floor and fell prone. The Martian plunged heavily atop his prostrate body, exhausting the air from Powers' body with an explosive "whoosh."

Frantically the radio man squirmed to escape those clutching fingers, but in vain. The mutineer was as strong as a hull and built on those general principles. His weight held Powers down and groping iron fingers sought his throat—found it. Great fiery pinwheels whirled in space, then blackness reeled inward upon them from out of the infinite, blotting them out.

Suddenly the blackness receded as the terrible pressure was released. Coughing blood, the mutineer slumped to the floor, dead from a bullet wound. One of the captain's shots had taken effect almost too late. Powers struggled to his feet just in time to see Captain Nathan pick up his two assailants and bring their heads together with terrific force. They dropped limply to the floor, unconscious.

Leaping forward, Powers grasped Captain Nathan's arm. "Where's Miss Reynolds and Larson?" he wheezed between laboring breaths.

A scream cut the answer short, coming from the direction of the control room.

"Little moons of Mars!" the captain burst out. "He's in the control room. Come on, we've got to get him before he wrecks us!"

TOGETHER they raced up the corridor to the ladder entering the control room. Powers caught a glimpse

of the madman. He was desperately whirling the wheel that closed the heavy port which sealed the control room from the rest of the ship in a time of emergency.

He scrambled through the rapidly narrowing opening just in time. The door clanged shut behind him. Faintly, he could hear Captain Nathan pounding futilely on the barrier, but he had no time to note anything further than the limp body of the girl lying where the engineer had flung her. She was conscious and wide eyed with excitement, and her silver-blond hair tumbled about in disarray. But she showed no sign of fright, her gaze tense on the drama before her.

The mad Swede flung his great body at him then, and he met the attack on one knee. Like a battering ram the charging form struck him. His gun went flying from his hand in an arc to disappear down the forward lookout corridor.

Powers lunged aside in a wild leap and eluded the clutching fingers of the engineer. But in the act he struck his head a wicked blow against the bulkhead. Stars whirled before his eyes, and his head swam in dizzy circles.

Before he could regain his scattered senses, the madman lunged at him. He struck out blindly, had the painful satisfaction of feeling his fist collide with a stony chin. Rolling over, he thrust himself to his knees, then the reassuring solidness of the floor was beneath his feet. In a moment both men were on their feet again, facing each other, circling, looking for an opening.

Realizing the lack of result of his first desperate rush, the engineer's eyes narrowed craftily and he watched for his chance. Powers lashed out with his fist—missed—struck again. A spurt of blood reddened the engineer's face. He loosed an infuriated roar of rage.

With amazing swiftness he recovered and sprang forward. Surprised, Powers was caught off balance. He fell heavily backward, his opponent astride his writhing body. Fingers clutched his throat, contracted. Desperately he wormed his athletic legs up under him. There was a roaring in his ears and his lungs felt as if they were bursting, while the vise-like clutch on his neck tightened inexorably.

Gathering all his remaining strength, he shot his legs out stiffly, and like a leaden catapult, the engineer's body flung against the wall with an unbelievable force. Amazed, Powers felt his own body float gently off the floor and grasped hastily for something to hold him down. The gravity. It had been suddenly shut off.

Then, as suddenly as it had gone, it returned, and he rose to his feet to face Vera Reynolds, who stood at the control board, her slim fingers still on the gravity switch. He stared at her, then at the body of the engineer, who lay crumpled oddly against the wall, his neck at an angle.

"I thought he'd hit hard, if I turned the gravity off," confessed Vera, looking at him anxiously.

Powers grinned suddenly. "He *did*! Broke his neck." He rubbed his own ruefully and Vera darted anxiously to him.

"You're not hurt, are you?" she asked.

"If you mean, do I hurt, yes. I've a very interesting collection of bumps and bruises and various aches and scratches, but I'm all in one piece, apparently none the worse for wear."

"I'm glad," she said, then hastened to add, "not for your pains, but that you'll be none the worse for wear. You see . . . I . . ."

"You what?" He turned with interest to stare into her eyes.

A loud pounding on the closed port interrupted her answer.

"I think you'd better open that port before the Captain succeeds in smashing it open," she said.

QUICKLY he leaped to the wheel and spun it around. The anxious face of Captain Nathan appeared in the opening almost before the port door had entirely receded. An expression of relief spread across his features as he discovered Powers erect with Vera safely beside him. He turned and shouted down the ladder.

"Everything's all right here, Burns; you watch things down there."

Captain Nathan leaped up the remaining steps of the ladder and let out a satisfied snort at sight of the limp body of the engineer.

"Deader than a doornail!" he exploded. "I'd begun to believe that the youngsters didn't come like you any more. It reminds me of the old days. I'll see that you get a promotion for this."

Powers reddened. "I don't want it, sir, if it takes me off your ship."

Captain Nathan peered at him from beneath his bushy white eyebrows. "Well now, that *is* right. I wouldn't want to lose the first good man I've had in twenty voyages." He chuckled a moment. "But come now, we've got a lot to do. We'll have to take care of Carleton and those of the crew who were injured. I think we'll have a few space funerals too. But we'll take care of Carleton first, as he seems to be pretty badly hurt.

"And Miss Reynolds, I wish you'd stay close to us for awhile. I think the crew is sufficiently cowed, but you never can tell about a Martian. They're mighty mean and sneaky customers when they think they have more than an even chance to win. I think their

boldness will be at a pretty low ebb right now, however we can't invite trouble."

"I'd be glad to help you," returned Vera. "I've had nurse's training, you see, and I'm not afraid of a little blood. If Mr. Carleton is badly hurt, he'll need the best attention we can give him. Where is your emergency kit?"

"Right here," Captain Nathan hastened to procure it, and handed it to Powers. "Come on, now, we'll see how Burns is getting along with that mess down there."

Burns, still only partly clothed from his off-duty sleep, his shock of black hair unbelievably rumpled, met them in the corridor. He seemed badly flustered and Captain Nathan gazed at him sharply.

"The crew have returned to their quarters, sir," he reported. "I have Lieutenant Carleton in his bunk. He's in a bad way, sir, and we'd better do something for him quick. Four of the crew are dead."

In a moment they were gathered about the prostrate form of the injured Carleton, while Captain Nathan and Vera worked expertly over him. Captain Nathan shook his white-haired head moodily as the wound was revealed, and Powers glanced at Burns. Burns stared back at him with a strained look in his gray eyes and shook his head, again disarranging the black locks he had attempted to brush back with his hand.

As they stood there, the silence allowed their ears to attune once more to the uncanny whispering from outside. It seemed louder now, more insistent, and its note of horror was enhanced by a weird whining, moaning timbre.

Burns looked about uneasily.

"You hear it?" he asked hoarsely.

Powers nodded, white-faced. "Yeah,"

he whispered back, then strengthened his tones to full audibility as the whisper seemed to merge with the sibilance beyond the hull. He cleared his throat noisily.

"Yeah," he agreed. "But whatever it is, it can't get in."

"But what is it?" said Burns nervously. "I wish to God we could see. It wouldn't be so bad if we *knew*. There can't be anything *living* out there . . ."

"Not superstitious are you, Burns?" came Captain Nathan's scornful voice.

"N-no," said Burns dubiously. "I don't believe in ghosts . . . but still," he persisted stubbornly, "there's *something* out there . . .!" He subsided into silence and the whispering swelled once more until it seemed to beat into the skulls of its hearers. Burns' face grew gray and drawn and his eyes darted about in growing terror.

Abruptly Powers gripped his arm and squeezed strongly, reassuringly a moment to brace the man up. Burns stiffened, and his lips tightened.

AS first aid work was completed, Carleton stirred a bit, opened his eyes and looked around him. He spied Captain Nathan bending over him.

"Captain," he gasped weakly, terrified understanding in his eyes, "Am I . . . ?"

"Quiet, lad," the captain soothed him. "You'll be as good as new in a few hours, but you've got to rest now."

Carleton considered him quietly for awhile, looked at the silent faces around them. Then he spoke. "You always were a poor liar, Captain," he whispered weakly. "I'm done for, and you know it."

"No such thing!" snorted Captain Nathan, glancing covertly at the three silent spectators to tragedy. "You've only a bad flesh wound. Won't bother

you at all. And besides, I'm not going to lose as good a man as you, if I have to turn you over and spank you."

"As good a man—" Carleton's voice was weak. "Good?—" Suddenly he halted and he seemed listening intently. Terror leaped into his features and his fingers sought Captain Nathan's hand. "Listen, Captain," he shrilled in a loud, gasping voice. "Don't you hear it—that whispering? It's coming—for me! Listen—" he held up an arm weakly, and unconsciously all listened.

Softly, sibilantly, indistinguishable as ever, the whispering was audible. Burns squirmed uneasily and Powers gripped his arm. Vera's face grew alarmingly pale, but she bit her lip bravely.

"Bosh," said the captain bluffly, and in that moment Powers gained a new respect and admiration for the veteran spaceman's courage, "that's only imagination. There can't be any sounds in space—we've just hypnotized ourselves into believing . . ."

"Good—" repeated Carleton strangely, his eyes turning up vacantly, and seeming oblivious of their presence now. "Me, a good man!" his voice rose from a whisper and he laughed ironically. "No, not good; *bad!*"

"God, it's getting dark."

He turned his head desperately around, eyes unseeing. "Captain, you're all wrong—about me. I—I'm not good. I would have—killed you all—killed you all—for our cargo." He paused exhausted, but his features writhed in terror.

"*He can't see!*" Vera breathed in horror. "He's . . ."

Captain Nathan lifted a hand. "Listen to what he's trying to say—about the cargo. Something funny here."

Powers stared at him—thought of the valuable cargo of radium in the hold.

Carleton spoke again, his voice jerky,

failing, spasmodic. "I got to tell you—before I die. I was planning—to take that cargo—for myself. We aren't on our course. In another quarter-million miles we'll—be nearing Vesta—" He choked and blood welled from his throat.

"Vesta!" exclaimed Burns. "That's Bloody Mose' stronghold!"

"Yes," resumed Carleton weakly, speaking quickly now as if he had much to say and little time to say it, "we were going to—split the proceeds. I thought I'd get rich—quick—and save all those years of hard work—I thought—"

"But that whispering! It knew—! It couldn't keep quiet. It spoiled my plans—I don't even know where Vesta—is now. We're *lost!*"

Carleton sat up suddenly, possessed of mad strength.

"Whispering—" he gasped. "Whispering—always whispering. I've heard it for days—why—didn't I listen—more closely? It said—turn back to—our true course—but I didn't understand—and now—" he choked again.

"Whispering?" His voice became soft and filled with wonderment. The hair on Powers' neck rose as Carleton continued with a peculiar note of awe in his voice. "Why, it isn't whispering—*now!* It's plain as—day! It says—" A torrent of blood gushed from his mouth and he fell back limply on the bunk.

Captain Nathan leaped forward quickly and bent over him. Then he straightened.

"Yes," he said softly, "I guess the whispering is plain now, old man."

CHAPTER III

Whispering—and Madness

SILENCE descended upon the group for a moment while Captain Nathan covered the wax-like face. Louder than

ever, as if insistent of a hearing, the whispering came to their ears.

"It says—" Burns broke the silence, his face livid with fear. "God, what does it say? I'll go nuts if it keeps up much longer!"

Captain Nathan's bearing changed abruptly, and once more he became "Old Thunder." "Get out of here, you blithering idiot, and get to your post!" he bellowed. "We'll have plenty to think about besides whispers if we're going to get back on our course. We may not know what the whispering is, but at least we do know that Bloody Mose is on our trail! And that's no whisper!"

Several hours later all aboard the ship were convinced of their helplessness. They were blind, instruments registering wild and impossible things. How to navigate space under such conditions?

"There's just one chance," said Captain Nathan somberly, addressing the sober faces of the other three occupants of the control room.

"And what is that?" asked Powers quietly.

Captain Nathan glanced at Burns' strained face; took in once more Vera Reynolds' calm, pale features.

"It's hard to talk this way before a woman—" he began.

"It shouldn't be," said Vera calmly. "Women are no longer the weak, hysterical creatures they used to be. We can face the facts as well as any man, and I expect that you'll speak as if I were a man."

Captain Nathan nodded. "I expected that," he said, "but I knew it, or I wouldn't have let you take passage on my ship."

Burns coughed nervously. "The chance—"

"—is a long one, and totally independent of our own actions," finished

Captain Nathan. "In short, we are drifting off our course, somewhere near Vesta, and totally blind. Without anything to guide us, we can't use any of our fuel without practically throwing away all possibility of ever saving our lives. Our one chance is this: The ports must clear, and this strange condition abate, or else . . ." he shrugged.

"If we came near enough to Vesta we could maneuver to a landing with our indicators," stated Burns nervously.

"Have you ever tried such a landing?" snapped Captain Nathan in irritation.

"Well, no, but—"

"Then don't mention it again. Vesta is an incredibly jumbled mass of sharp rock formations having no consistent elevation. Our indicators could hardly pilot us among those rocks. We couldn't make a landing without crashing.

"Even with full visibility, it is almost impossible to land on Vesta. If it were such an easy thing, Bloody Mose would've been captured long ago. It's his damnable skill at maneuvering his vessel into those dangerous places on the planetoid, using every opportunity offered for disappearance, that beats his pursuers. Once landed, he's like a gopher in a cornfield. But we can't do it, so forget that idea."

"Then our only chance is to wait until the ports clear and visibility returns?" concluded Powers.

"Yes."

"Wait!" exclaimed Burns. "Wait! And listen interminably to that damnable whispering while we drift aimlessly into space past the only blasted bit of rock this side of the asteroid belt?"

"Whisper or no whisper, it's settled," snapped Captain Nathan with flat finality. "We'll wait!"

"And what if Bloody Mose finds us?"

Captain Nathan smiled grimly. "We won't have to listen to the whispering

very much longer when he does find us. And I wouldn't be surprised if our difficulties are directly caused by agents of Bloody Mose. He has scientists with him who have perfected things that the Spaceways Police would give half their ships to know. Maybe this damned blindness, and the blanking out of the radio are some of his scientific tricks. If that's so, I expect to hear from him soon now. But I think he's made one mistake."

"And that?" asked Powers.

"He's probably expecting us to do just what Burns suggests, anticipating easy pickings when we crash on Vesta. But we'll fool . . ."

A red flicker on the instrument board told of a message from the engine room. Captain Nathan stepped to the speaking tube.

"Yes?" he questioned, then listened a moment. "A suggestion to offer? Okay, come up to the control room."

The captain resumed his seat. "One of the crew has a suggestion to offer," he explained. "He's coming up. These Martians sometimes have clever ideas."

AS they waited he talked of trivial things, to keep them from listening to the maddening whispering from beyond the bull.

In a moment the swarthy face of a Martian sailor appeared in the control room port. He stepped forward hesitatingly, his long arms swinging nervously.

"What is it, man?" questioned Captain Nathan.

The Martian began speaking rapidly, as if he had a piece to speak and wished mightily to get done with it.

"We *must* land on Vesta," he chattered, placing peculiar emphasis on certain words. "It is our only chance and the crew *ask* that you attempt a landing *at once*. We are near Vesta, as the

instruments show, and we feel that the ship can be maneuvered to a landing successfully, even though we can't see to land."

Captain Nathan's face purpled at the obviousness of the speech. Powers' heart leaped within him at the realization that this was not a suggestion, but an *order*! The superstitious Martians were ready to mutiny again.

"Shall I give the *order*?" queried the Martian, insistently.

"No!" roared Captain Nathan, exploding at last into fiery rage. He leaped to his feet. "How do you expect to make a blind landing?" he challenged.

The Martian smiled a little knowingly. "We Martians are the best sailors in all space," he boasted proudly, "Several times already I have made dark landings on the planet Pluto, and that is no different than the maneuver we now find necessary."

"You damned fool!" roared the irate captain. "Have you ever seen Vesta? Is it a smooth, flat surface like Pluto? A landing on Vesta is impossible! You will tell your comrades that no such maneuver will be attempted. That's all." He dismissed the Martian with a wave of his hand and sank into his chair, breathing heavily.

Powers watched the disgruntled Martian disappear down the corridor and shook his head. "I'm afraid we can't hold those fellows at bay much longer," he said. "Their next move will be an attempt to take over themselves."

"You're right," admitted Captain Nathan. "Let's hope that the ports clear before they decide to take matters into their own hands. In all events, it's only eight against three."

"Against *four*," corrected Vera.

Powers shot an admiring glance at the girl and she blushed a bit, but stood her ground. Captain Nathan eyed her

speculatively, then he grinned. "My boy," he said to Powers, "do you know what it means when a woman blushes as a man looks at her the way you are now? I guess women haven't changed so much after all. And now, Burns, take the lookout. Powers, you and Miss Reynolds keep an eye on the radio for messages."

He watched as the pair descended the ladder, then his face sobered and a worried look appeared on his features. He reached down into the depths of one of his desk drawers and withdrew a quart bottle. A stiff shot, and he shook his grizzled old head in defiance. "Now let it whisper!" he muttered, glaring at the hull. "Let it whisper, damn its lousy . . ." He didn't say "hide" as he had intended, because it would have to be living to have a "hide" and nothing could live in a vacuum. Instead, he took another swig.

DOWN in the radio room Powers inspected his instruments. There was no change, and he seated himself beside Vera, who had taken up her post on a cushioned bench that ran below the port.

"I wonder what Captain Nathan meant about a woman's blush?" he asked, trying not to listen to the whispering outside the hull.

Vera flushed slightly, but seemed relieved that he had discovered something to talk about. "You don't know?" she questioned.

"I'm afraid I'm a little behind the times," he said, "but I think I know what he meant all right. I've always thought that love at first sight, or very nearly first sight, was a pipe dream. And I've always dreamed that girls were shy about admitting any love at all until the man of their choice finally tumbled to the fact that he was in love. Since all this trouble we've had, I

haven't been able to reach you, sort of, with this man-to-man business in between."

"Haven't been able to reach me?" questioned Vera. "Your eyes have been fairly shouting 'I love you' ever since that fight in the control room."

"Have they?" he lifted his eyebrows. "I hadn't thought about my eyes. I'd like to tell you in a little more convincing way, even though it seems foolish to talk about things that don't need any talking about."

"Why not kiss me?" she queried very directly.

He gasped. "Then you aren't one of those modern 'sentiment-is-silly' type of girls?"

"I wouldn't be for the world," she reassured him. "Really I'm just a simple, love-hungry little girl, very much frightened by all that is going on."

"Frightened?" he laughed. "You're a delightful little liar, but I am going to believe you just the same. Now, just what are you afraid of?"

"Well, most of all, that you won't kiss me . . ."

He pulled her toward him and stared down into her blue eyes. "All right, young lady, that's all I wanted to know. Just take a deep breath, and presto, your fears will be gone."

"You're a hundred times eighty-seven," she whispered.

Suddenly a terrific jolt hurled them to the floor of the radio room in a heap. Then the rumble of the rockets gave swift impetus to the ship.

"The rockets!" shouted Powers, picking Vera up from the floor. "You'll have to wait for that kiss. We've got to go places!"

SWIFTLY they made their way down the corridor to the control room and climbed the ladder. Captain Nathan was flinging various levers futilely, a

drawn expression on his face. He turned from the control board as they entered. Powers took in the situation at a glance.

"What's up?" he asked swiftly, as Burns also hurried into the room, alarm on his features.

"The crew!" Captain Nathan burst out. "They've disconnected the wires leading to the control room and rigged controls of their own. They're trying to land us on Vesta!"

"Well, we'll stop that quick," retorted Powers, turning to the ladder.

Captain Nathan halted him. "No use, they've sealed the port to the engine room. They're in full control. As usual, the Martian has proved his cleverness."

"You mean we're at the mercy of these renegades?" asked Burns, white-faced.

"Yes," snapped Captain Nathan, "but you shouldn't worry—they are doing exactly what you wanted us to do."

Burns closed his mouth tightly and glanced about. Then he turned abruptly back toward the lookout corridor. But he didn't reach it. With an ear-shattering roar there came a terrific explosion from the engine room and the ship reeled violently. The four were flung heavily to the floor, Burns striking his head an audible smash against the jamb of the lookout door. He slammed to the floor in a dazed heap.

Powers staggered dazedly to his feet, then helped Vera to rise.

"Are you hurt?" he asked anxiously.

"N-no," she returned a bit uncertainly. "Just a little shaken up, I guess. I'll be all right."

The captain also clambered to his feet, shaking his limbs dubiously. On his face was a look of deadly pallor. He watched as Powers stepped over to the unconscious Burns.

"Is he dead?" he asked.

"No," replied Powers, "just stunned, I think. He'll come around all right." He chafed the stunned man's wrists and was rewarded by flickering eyelids.

"What happened?" asked Vera in shaken tones.

Captain Nathan inspected his meters. "The rocket tubes exploded," he explained. "The Martians must've gotten their control wires crossed. However, we're still intact here, no leakage of air."

Vera gasped. "Those poor fellows in the engine room! Some of them must be hurt. We ought to help them."

"Don't worry about that," Captain Nathan's voice was grim. "They won't need any help. The engine room has been blown wide open. The meters show a complete vacuum."

"Oh," said Vera in a small voice tinged with horror and pity.

DURING the silence that hung over them for a moment, Burns opened his eyes. He lay on the floor however, and made no attempt to rise.

"How do you feel, old man?" asked Powers.

"Feel?" Burns' eyes were narrowed with intentness, an odd expression in their gray depths. "I feel fine, but I'm trying to place something. There's something different. I can't get just what it is."

"The engine room is wrecked and we're drifting, more than likely headed straight toward Vesta, if that's what you mean about something different," replied Captain Nathan grimly.

"Well, that isn't so bad," said Burns slowly, weakly. "I've always expected I'd get killed in space sometime. But this feeling—this sense of great relief—I can't understand it. How do I feel so fine? Even my head doesn't ache. I feel as though I were floating on cotton. That shouldn't be, after that sock on the

dome. Maybe I'm out of my head. But there's something—by gosh, I've got it! The whispering! It's stopped!"

"Why so it has!" exclaimed Powers.

Captain Nathan listened a moment. Then a smile lit his features. "You two young idiots, there never was any whispering. It was all in your imagination, and it took a good smack on the head to make you realize it."

"Imagination nothing!" exclaimed Burns, pointing to the port. "We're still flying blind . . ." he struggled to rise, and his face turned pale.

"Burns!" exclaimed Powers, leaping forward to assist him. "What's wrong?"

Burns swayed weakly. "Dizzy . . ." he muttered. "All right until I started to get up . . ." his head jerked up suddenly and his eyes widened, stared. "*It's coming back!*" he choked. "The whispering. It's coming back! You can't fool me, that sock on the head affected my hearing for a minute. I hear it again. Listen, and don't lie to me . . .!"

An expression of terror was growing on his face.

Powers and Vera and Captain Nathan strained their ears, but they could hear nothing.

"Just your head," Powers spoke, "ringing from that hump on the dome. I can't hear anything now, it's really stopped."

Burns seemed hardly paying any attention, but was gripping his own hand, squeezing it. "I can't feel anything . . .!" he moaned. Panic was growing on his features, and now he stared at them. "You're *not* lying!" he gasped in terror—terror that was growing uncontrollable, shaking his body.

"You can't hear it. *But I can!* Carleton heard it clearly at the last too, when we couldn't understand it. It's coming for me too, I tell you it's coming for me! *I'm going to die!*" Burns' voice was rushing on to a high, frantic

pitch. He tore free of Powers' sustaining grip.

"Look at the instrument board!" he croaked. "Something's coming! Even the instruments register it!"

Captain Nathan leaped to the board. "Strong meteoric indication," he gasped, "and headed this way too!"

"Meteor nothing!" screamed Burns. "That's Bloody Mose' ship come for us. Look how that indicator works. It's a ship! But he won't get me, I tell you. He won't get me! *And that whispering either!*"

GONE completely mad with terror, Burns flung Captain Nathan aside and wrenched the indicator from its wires. Then, with demonic strength he tore at the levers until the instrument board lay in demolished splinters. "They won't get me!" he screamed again and again.

Suddenly the reaction set in and he slumped to the floor, clutching his hands and sobbing in terror. "My hands—I can't feel anything . . ."

Powers bent over him. "Pull yourself together man," he urged. "You're a little dazed from that crack on the head, and you're imagining things. Take it easy for awhile. That isn't Mose' ship. It's only a meteor and the chances are a million to one against its hitting us."

Burns rose to his feet, face white, but lips now firmly compressed.

"Okay," he said finally, apparently getting a grip on himself. "I'm all right now, outside of feeling a little numb." A strange gleam entered his eyes as Powers released his arm and stepped back.

Suddenly, like a striking cobra, he leaped forward and jerked open the drawer of the captain's desk.

"Stop him!" shouted Captain Nathan, aghast. "He's after my gun! The

man's insane!"

But Powers was too late. Before he could prevent it the lookout man grasped the revolver and leaped away so that he stood with his back against the wrecked control board. He laughed loudly, insanely.

"I told you they wouldn't get me!" he screamed again. Then with a quick motion he raised his weapon and fired into his open mouth.

With a shuddering cry Vera buried her head in her arms and turned from the scene. Powers leaped to her side when he had time to recover from his stunned consternation, wrapping an arm protectively around her, somewhat unnecessarily now that the immediate danger was over.

Captain Nathan removed his coat slowly and placed it over the prostrate body.

Suddenly he straightened, listening intently.

"What is it?" asked Powers, and an odd chill chased down his spine. You're not hearing . . . ?"

"There was a noise," Captain Nathan whispered. "A hull noise. Something has contacted us. Quick! They've already opened the main port and made space connections!"

He opened a wall cabinet.

"It must be Bloody Mose's ship. Here, take these guns. We might as well die fighting and do our best to make Mose pay for some of the things he's done. Make him pay for Carleton, and poor Burns there, and the crew. That whispering devil!"

"Listen!" exclaimed Powers, lifting a hand to halt Captain Nathan's vindictive tirade.

"Good Lord, I hope you don't hear the whispering now, too!"

"No, listen. They're inside the ship!" Powers grabbed a gun. "Do as much damage as you can," he said hoarsely.

"And don't let them take either of you alive!"

A RATTLING noise came from down the corridor, as of a helmet being raised. Then a loud voice shouted. "Anybody alive on board?"

"Keep quiet," warned Powers in a low voice. "Let them think we're all dead. We'll surprise them."

There was silence for a moment, then a louder noise. Heavy thuds, as of weighted feet, then the sound of heavy boots on the rungs of the ladder. The uniformed figure of a space patrolman rose from below and stepped into the control room.

Powers dropped his gun in stunned amazement. "Who are you?" he asked in bewilderment.

"I'm from the Spaceways Police Police Ship E243. We've been looking for you. We sighted you just an hour ago, as you ran out of the dust cloud."

"Dust cloud?" gasped the Captain.

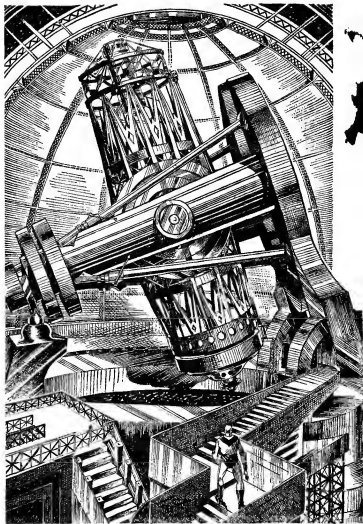
"Yes. We've never encountered one before, but astronomers tell us they must be common in space. Just a cloud of dust particles which ionize communication and play perfect hell with the instruments. You must have passed directly through it, judging from the way your hull is scoured. Even your ports are completely sanded. Must have been tough flying blind."

"So that's what caused the whispering!" exclaimed Powers. "We were passing through a cloud of dust!"

"Yes," said the space patrolman. "But we'd better get out of here in a hurry. You may not know it, but you are going like the devil, straight for Vesta. Are you three all that are alive on board?"

"Yes," nodded Powers. "We're all that are left. We thought you were Bloody Mose and were going to take as

(Concluded on page 128)



Fletcher Geunt strode toward the vast, highpowered telescope to make his observation on Acrox 3784

The World That Dissolved

By Polton Cross

Strange radiation came from the exploding star,
and the tiny planet dissolved beneath his feet

CHAPTER I Observatory Ten

CURT VERNOL slowly cut off the power of his flyer's rear jets, gave a burst of recoil to the forward rockets which immediately slowed down the little space ship's tremendous headlong rush through infinity, a rush it had pretty well maintained ever since leaving Earth. Now it was in the remote regions beyond Pluto.

Somewhat moodily, Curt gazed through the forward port. To the left hung heavy little Pluto. Dead ahead, still some 300,000 miles distant, loomed a lone planetoid—actually the tenth planet of the solar system since it obeyed the Sun's gravity. A lonely little world, only a third the size of Earth, but with gravity almost identical through tight packing of materials.

A world utterly deserted save for one massive completely airtight observatory, better known as Observatory Ten, furthest flung observation post of all the system. Since 2004, ten years before, this and all the other observatories on each planet had been under the control of the Americas.

Curt's eyes be-

came faintly disgusted as he studied the tiny world.

"So that's where I've got to spend twelve months!" he growled. "Twelve months on a spacial desert island, keeping a watch on the cosmos for the long distance ships, guiding their courses . . . A veritable celestial lighthouse! Charming!"

Inwardly cursing the day he had joined the Space Observers and thereby left himself open for lonely jobs of this sort, he gave a final burst to the rockets and swept downward at terrific speed toward the distant planetoid. He hung tight in his seat, eating up the dozens of miles. . . . In two hours the lonely world was below him, jagged and scarred.

He flattened the ship out, made a perfect landing on the flat plain within a mile of the massive, towering Observatory.

In a moment he had scrambled into his space suit, and opened the airlock. Carefully he trod onto the jagged rock of the palely lit world, walking with infinite caution to avoid the slightest chance of tearing his suit. The light of the ridiculous sun, shedding the equivalent of full moonlight on Earth, enabled him to see pretty clearly where he was going.

All around him crouched massive,

Illustrated by Julian S. Krupa.

rugged rocks, glinting faintly in the dim light. Overhead, the vast vault of the universe was dusted with multimillions of stars. . . . Curt felt a trifle depressed, realized he would need all his willpower to defeat the loneliness begotten of constant association with cosmic fastness. . . .

At last he arrived at the monstrous airlock of the Observatory, paused for a moment to survey the rearing walls of *glasite*, an isotopic metal of beryllium basis. Far atop the building loomed the solitary unbreakable glass dome through which the observations were made.

He smiled rather grimly to himself, then reached out with his heated glove and pressed the lock's external button. He waited as the outermost lock began to move sideways, then he stepped inside. Three locks in all, the centermost one a "leveling off" room wherein he removed his space suit and accustomed himself to normal air pressure and a 70° Fahrenheit temperature . . .

As the last lock opened he stepped into the huge major room of the observatory and silently faced the man he had come to relieve.

CURT had never particularly liked Fletcher Gaunt at any time, and so far as he could see the twelve-month interval had not improved the man in the least. He was still coldly supercilious, hither eyed, with a permanently harsh tautness about his thin-lipped mouth. Certainly he looked in good health. His lean cheeks were tinged with color, his black hair stood up vitally. . . .

For several seconds he stood regarding Curt steadily, then he snapped out uncivilly.

"And what the hell do you want?"

Curt stared at him in surprise. "What do I want? Your time's up, that's all:

I'm here to relieve you. I thought you'd be glad to see me."

"I'm not glad to see you, and my time isn't up for another week," Gaunt retorted acidly. "I don't like people here before time, it disarranges my work. You've got to work to schedule here, stuck away in this blasted hole—And I don't like it being interrupted! See?"

Curt remained silent, his lips compressed. Gaunt waved his arm vaguely.

"I saw your ship land," he growled. "I thought you were a lone traveler in need of help. That's why I let the locks open."

"I traveled rather faster than I intended. That new Myers rocket fuel enabled me to knock a week off schedule. . ." Curt thrust his hands in his pockets, glanced around him. "I don't see what you're so concerned about, Gaunt. Why don't you get moving and hand things over to me? If I'm early, that's to your advantage."

"Yeah?" Gaunt eyed him darkly. "I'll go when I'm good and ready, not before. Nice damn thing when a guy can't finish his shift in peace! In another week I'll be glad to go, and not until then. In the meantime, it's against the Company's rules to have two men on one station, so you'd better be on your way."

Curt swung around, his brows down over his gray eyes.

"On my way! What the hell are you talking about?"

"Clear enough, isn't it? Besides, seven days' extra food will put you in the queer at the end of your shift here. My time isn't up yet, so cruise around until it is. That's all!"

Gaunt turned aside, only to swing back as Curt gripped his arm fiercely. Their eyes met.

"What's the big idea, Gaunt?" Curt asked in a low voice. "What are you afraid of? You don't think I'm mug

enough to believe you're stopping here for love of duty, do you?"

"If you've any brains, that's just what you *will* believe!"

"Yeah? And suppose I just stick around to worry you?"

"In that case . . ." Gaunt shrugged—then with a sudden lightning movement he snatched his flame pistol from its holster and leveled it steadily. "In that case," he resumed softly, "you'll meet up with the business end of this! Understand?"

Curt slowly raised his arms, eyes narrowed and jaw set. Gaunt came forward slowly, smiling cynically.

"I don't like little boys around before time, see? Either you take off into space again, or—"

He broke off suddenly as Curt abruptly lowered his right arm and slammed out his fist with terrific force. It struck Gaunt clean in the face, sent him reeling backwards with blood trickling from a split lip. Taken utterly by surprise he went reeling backward, brought up hard against the control board of the monstrous telescopic reflector. His gun clattered out of his hand.

Instantly, Curt dived for it—but he wasn't quick enough. By the time he had slithered to it Gaunt had recovered himself, snatched it up from the floor from under Curt's very hand. Ruthlessly he swung it upward and depressed the button. . . .

Curt dropped with a crash to the floor, the upper part of his head entirely seared away. He dropped face up, still with an expression of amazed horror on his features.

FOR several seconds Gaunt stood staring, mechanically wiping his bleeding lip with the back of his hand. The gun fumes curled acridly round his nostrils. . . . Then very gradually he

mastered himself, pushed the gun back in its holster.

"Damn!" he breathed, and scowled. "This may prove difficult unless I—"

He stood thinking for a while, then slowly nodded to himself. In a moment or two he had drawn a space suit onto the corpse, pulled on his own suit, then lifted the body in his arms. Opening the triple locks he finally gained Curt's small space flyer and dropped the body inside it. He removed the space suit again, then taking Curt's own flame gun from his belt he fired a charge harmlessly into the air, put the weapon back in Curt's stiffening hand.

The rest was simple. He set the space machine's controls to a straight path and slipped the automatic delayed action pilot in commission. By the time he had left the ship and closed the airlock with the external counter switches the controls were ready to function.

Smiling grimly behind his glass helmet Gaunt watched the little flyer hurtle upward, vanish almost immediately against the star scattered expanse of void.

"Easy," he murmured. "Suicide in the void. Common enough when loneliness gets a pilot, especially a new guy like Vernol. . . . Possibly he'll never be found. Even if he is, I'm in the clear."

Chuckling at his own ingenuity he returned to the observatory. Hardly had he removed his space suit before the long distance space radio whistled stridently for attention. Immediately he settled before the banked apparatus, tuned in to the special wavelength which was the secret of himself and few associates. As he had expected, the coldly clipped voice of Ranvil Gates came into the loud speaker.

"Gaunt? We're two million miles away from you. All set for a landing when we arrive?"

"I am—now," Gaunt assented.

"Meaning what?"

Briefly Gaunt related the details of his adventure with Curt Vernol. Ranvil Gates gave a whistle.

"Say, that was a darned good idea of yours. Not much chance of him being found though out in the intergalaxies."

Gaunt laughed shortly. "There'd have been no need for any of it if you'd arrived up to time. Where in hell have you been all this time? You were due three days ago."

"We've been having trouble with the stern rocket tubes. This tub isn't good for many more trips, chief. We've patched them up, but I don't like the look of 'em even now. Sooner we clear the gravity fields of the big fellows the better I'll like it."

"Plenty of stuff aboard?"

"Say, there's enough platinum here to make us all millionaires for life. All those little tradings we've done will be fleabites compared to this lot. Wait till you see it!"

"That's just what I am waiting for!" Gaunt retorted. "And step on it, will you? I can't leave here until you come: there's no other ship, remember."

"O. K. Be with you in twenty-four hours. . . ."

"Right." Gaunt switched off, slowly rubbed his hands together in anticipation. Illicit platinum mining on Io was distinctly profitable, and well worth the risk.

With a daredevil like Gates to do the work and this lonely outpost as a distributing station to the shady buyers of various planets. . . . Easy! Wonderfully easy! Probably Curt Vernol was better dead, after all. Had he only gone into space to finish his time he might have learned too much. . . .

"Far better dead," Gaunt murmured reflectively—then he frowned in surprise as the normal Earth radio wave started the signaling apparatus off

again. Puzzled, he tuned in.

"Observatory Ten answering Earth. What is it, Earth?"

"Chief Earth Observatory calling Observatory Ten. Is this Observer Vernol?"

"Observer Vernol has not yet arrived—is not due for seven more earth days," Gaunt replied calmly. "This is Observer Gaunt. . . ."

"Observer Gaunt, you will take full details of star known as Acron 3784, between the paths of Canopus and Delta Argus, almost at the entrance of the Great Cleft in Argus. This star, which is probably of the temporary order, came into being on March 17, 2000, and became a fourth magnitude star. Has now dropped to the fifth magnitude. Report in detail and give reasons. Earth observations none too clear. That is all."

"Message received. Acron 3784 will be investigated," Gaunt intoned, and switched off.

CHAPTER II

Acron 3784

THE matter was purely routine work. Stars that come and go are common enough. Gaunt got to his feet and strode to the vast high powered telescope in the center of the great room, swung round the pilot telescope until at last Acron was on the line-divided finder. Moving to the controlling panel he soon had the star centered exactly on the great viewing mirror of mercurioid alloy. The reflector, utilizing new magnetic means of trapping light waves, produced an image that was flawless and still.

Gaunt dimmed the lights, studied the image carefully. Acron had always been a bit of a mystery, anyway—one of that strange family of mystically born stars which make their appearance suddenly

in various parts of the sky, and then probably vanish just as strangely.

Fourth magnitude to fifth? Gaunt turned away from the screen and got to work with his spectroheliograph, made the usual routine study. The star was a main-sequence star of the G-type, and of typical solar characteristics. The spectrum of its photosphere was crossed by innumerable fine dark lines produced by the metallic absorptions in its higher atmosphere, together with definite evidences of calcium. Mass was almost identical with Earth's sun. Acron 3784 was indeed pretty similar to thousands of other main sequence stars in the universe, save in the matter of its sudden drop in magnitude.

Gaunt yawned a little. So what? He had checked up, and that was all there was to it. Thoughtfully, he went on checking the absolute magnitude a star of that type could stand. It had dropped from magnitude 4.7 to exactly 5.53, and was still dropping. . . .

Gaunt stroked his chin. That lay pretty close to instability. Anything below 6.78 magnitude would pass the star over the borderline from main sequence type to white dwarf. . . .

He turned back to the screen. Other things were visible on Acron. Its brilliant photosphere, shielded by the telescope's dark glass screens, was punctured with rapidly growing spots—scars that spread visibly from the equatorial regions as the moments passed by. Definitely, the marks were sunspots, occurring at tremendous speed. Gaunt remembered the phenomenon was by no means uncommon. He had seen stars eat themselves out in this fashion in a matter of hours.

Pensive, he continued to watch. The change in magnitude was now explained.

The star was suffering from a severe attack of sunspots, spreading where no normal sunspots should, from equator

to poles. As the minutes went by the magnitude dropped still more.

Gaunt's last reading was 5.82. He relayed that observation to Earth, promised further details as they came through, then turned to the more important matter of watching space for some sign of Ranvil Gates. But the telescope only gave a view of the eternal stars. As yet, Gates' ship was not in sight.

Gaunt thought of Curt Vernol's shattered body far out in the wastes. A cold smile touched his lips. . . . He turned the reflector back to Acron. . . .

ACRON had changed again. Its face was a mass of spots, many of them obviously thousands of miles wide. Its light too had dimmed considerably. Again Gaunt calculated. . . .

Magnitude 6.80. The star was over the stability region. In that case—Gaunt shrugged. Just another stellar death, taking place at such a speed it could be viewed at leisure. Not that Gaunt wanted to view it, anyway: he had other things to worry him.

Once more he turned to the radio and gave his final report that Acron 3784 had crossed the stability line and would descend rapidly to a white dwarf state and finally expire altogether. Then he turned from the apparatus and glanced at his watch. He had time to get a sleep, and by then Gates should be somewhere close at hand.

He left the reflector mechanism in operation, slowly turning to follow Acron. No sense in setting the thing twice: he'd have to make one more general analysis report, anyhow.

GAUNT awoke suddenly, aware that for some time his incoherent dreaming had been disturbed by a curious sound—a far distant hissing sound that was totally alien to the usually

sepulchral quiet of this lone world. Normally, there was not a single sound save for the solemn snicking of the electric clocks.

Gaunt thought of Gates, of the dead Curt Vernol, of Acron 3784. Then he got off the bed and looked through the thick glass of the window. There was nothing save the far distant, pinpoint sun and rugged, barren rock. No sign of Gates: no sign of anything.

Rubbing his tousled head he switched on the lights and shuffled into the observatory, yawning as he went. Then his yawn stopped half way as he crossed the threshold of the doorway. He stared blankly, utterly unable to comprehend what he saw.

In the center of the buge place, where he had left the great reflector to follow Acron, was a hole. No reflector was present: the glass roof yawned like an empty eye. And on the metal floor was that hole, perfectly circular, huzzing and bissing like a hive of bees, filled within its expanse with deep, deadly black—the coal black of space that spoke of total absence of light reflection.

Gaunt gave a buge gulp and became suddenly aware that his knees were shaking with sbock at the incredible thing that had come to pass. With halfed eyes he went closer to the hole and stared at it. It was perhaps two feet deep in the immensely tough metal floor, faultlessly shorn round the edges and growing wider and wider as he stared at it.

At last his gaze rose to the massive pillars that had supported the reflector. They were chopped off clean, as though with a vast blade. In an exact line from the glass in the roof to the hole in the floor, covering a width of two feet, everything solid had totally disappeared! The reflector bearings, the screen, the cables. . . . All the lot.

Eighty tons of solid metal gone in five

hours or so? Metal flooring too, that was made to withstand the ravages of space cold? Even virgin basic rock on which the Observatory was built? Gaunt licked his suddenly dry lips, stared over the hole toward the radio apparatus. . . . So far that was untouched.

Then as the buzzing went on without interruption he looked round him again. The bearings of the vanished reflector were still disappearing into thin air, working slowly downward toward him. And that hole in the floor was increasing. . . .

HE turned suddenly, reached behind him and took up a metal rod from the work bench. Tentatively, he waved it above the hole. Nothing happened. Then he dropped it right into the hole. The huzzing seemed to become transiently louder, then the rod vanished utterly.

Gaunt frowned deeply. His fear had gone for the moment: instead, the scientist in him was uppermost. This thing had to have an explanation, and the root of that explanation seemed to be Acron 3784. He turned swiftly to the main window and stared out onto the deeps at the spot where Acron should have been. But it was no longer visible—not to the naked eye, at least. Like thousands of other temporary stars Acron had disappeared entirely.

"It had to vanish, anyway," Gaunt muttered. "Once it crossed the stability line it was bound to become a white dwarf. First it had sunspots which abnormally reduced its radiation. It crossed the line of safety and started to contract at terrific speed. The more it contracted the more the internal temperature rose and the more the surface cooled. The internal temperature would destroy the atoms in Acron's interior: there'd just be free electrons and

stripped nuclei. Rapidly, the effect spread to the photosphere and that too collapsed. Acron became a white dwarf of densely packed material in an incredibly short space of time. . . . And what happened when that contractive process began?"

He mused for a moment, went on talking to the air.

"Obviously, the destruction of the atoms and the vast electronic changes would release radiation through space. Thousands of years of normal supply would be squandered in an instant, as Eddington once showed so clearly. No more atoms to dam back the flood, no anything except a sudden outflow of all sorts of radiation. Then the white dwarf stage. . . ."

"Radiation," he repeated softly, turning to look back at the hole. "Radiation was concentrated right there. That telescope being of magnetic light wave trapping qualities, would draw both light waves and all other radiations to a focus, conduct them down the tubes onto the mercurioid mirror. Whatever radiations were given off by Acron at the moment of its final collapse were concentrated here. And then. . . ."

GAUNT stopped suddenly, moved to his instrument rack and took down a delicately balanced electrical apparatus. It was a Briggs Electronic Detector, so called by reason of its delicately balanced ability to check up on the vibrations of individual electrons in any given matter or gas. Carefully he fixed the highly complex controls and studied the testing screen keenly.

Thirty minutes passed. . . . An hour. And the hole had grown larger. When Gaunt finally studied his readings he could hardly credit his eyes.

"Is it possible?" he muttered. "Nothing but electrons in that hole. Negative electrons. No protons whatever: no op-

posite electric charge. One charge without the other, therefore nothing. For some reason protons have canceled out and all that remains is . . . Is the primal constituent of the universe. Negative electrons."

He became silent, turning the thing over in his mind. The buzzing worried him, so did the gradually expanding hole and vanishing metal pillars. . . . But the scientific riddle had stirred him. Slowly he went across to his desk and drew paper and pencil to him, began to figure slowly and thoughtfully, regardless of everything save the mystery that confronted him.

When at last he became conscious of his surroundings again he had the thing clear. It was remarkable enough, but the only possible solution.

"So I've stumbled on it," he breathed, staring in front of him. "The secret of space and matter! Soddy believed that there might be two classes of electricity in the universe with definite opposite effects, but he found only one which he called 'neutral,' though its effects were either positive or negative according to the balance achieved.*

Gaunt looked back at his computations, surveyed them absently.

"That makes it clear," he murmured. "It makes clear why there are such enormous ranges of empty space compared to the amount of solid matter

* Eddington showed us that the blasting away of atoms at the moment of a star slipping into the white dwarf stage leaves only uncontrolled negative electrons which radiate an energy that can only be classed as negative energy. Negative energy then, is space itself. That negative energy is backed by the whole preponderance of space. It was conducted down the mirror tubes and set up a negative energy field of terrific power which overbalanced and canceled the power of the positive protons, destroying the atoms themselves and leaving only electrons. And, since that original field was backed by all the vast preponderance of space, as against only the small positive units constituting the planet and all it contained, positive and negative do not balance any more. There is only negative—expanding space—in the hole.—Author.

therein. Only on rare occasions does the positive field balance the negative, and then matter comes into being. Space—negative energy—is the dominant factor. It explains why the stars are surrounded by millions of miles of emptiness. . . .

"Unintentionally, I have solved the whole secret of the universe. In the beginning there was only negative. From somewhere there came drifting positive fields, maybe from an extrauniversal source, and so matter was born wherever the fields crossed and balanced. And now . . ."

CHAPTER III

The Growing Circle of Death

GAUNT rose to his feet. The obvious thing to do was to communicate his discovery to Earth. He had discovered something that scientists had tried to find for generations—the answer to the mystery of which came first—space or matter?

He swung toward the radio apparatus—then stopped dead. It had become encompassed in the area of that vastly swollen hole. The vital wires to the generators had gone into nothing. The whole floor around it yawned in a deepening, utterly black pit. Communication with Earth, with anywhere for that matter, was definitely finished.

For the first time, Gaunt felt a vague qualm of fear. Up to now he had been absorbed in the interest of his discovery—but it was suddenly forced upon him that whatever he knew was entirely his own knowledge. He could not pass it on. Further, he was on a shrinking world, fast transforming itself into primal space-stuff.

He tried to think coherently, glanced quickly at the clock. The lapse of time during his deductions amazed him. Ran-

vil Gates ought to be somewhere in sight now. Upon him relied the only chance of getting off this collapsing world.

Gaunt leapt to the window and stared out at the stars. There was no sign of a distant glittering speck, no hint whatever of Gates being anywhere near. . . . He drummed his fingers agitatedly on the window frame, looked back at the widening hole. Before very long it would have encompassed the entire laboratory floor, and since it went downward at unknown, but great, speed it would only be a matter of hours before it pierced clean through this small world and allowed the deadly cold of space to sweep through. The entire little globe would be like an apple with a hole bored through it.

"No!" Gaunt whispered. "No! I won't be trapped here! Gates will come! He's got to come!"

He turned nervously and snatched his space suit from its cupboard. Hastily he clambered into it. He took one last look at the relentless hole, then tore open the three airlocks and went blundering outside onto the ragged plain. . . .

THE stars winked down at him steadily. He fancied he must have been a victim of hysteria for a moment or two. He lost awareness of his immediate surroundings, came back to himself with the realization that he had traveled some distance from the observatory and had now brought up sharp with his back against frowning black rock. His legs were shaking oddly. Perspiration poured down his face inside his stifling suit. He gazed wildly up at the stars.

And suddenly he saw something. A faint, not very far distant glimmer. He was practised enough in space lore to recognize the object as a lone space flyer. His heart gave a mighty leap. The object was coming nearer, beyond

doubt, backed by distant, sullen Jupiter and the giant worlds.

"Gates!" Gaunt screamed, inside his helmet. "Gates! I knew you'd come! Thank God! Thank God!"

He turned and scrambled up the low hill of rock behind him, gradually blundered to the top—stood a lone figure silhouetted against the stars. He waved his arms frantically, watched with an insane desperation as the glittering speck came nearer. . . .

At last it was no longer a speck but a visibly cigar shaped object. It was perhaps a hundred miles away now, perfectly distinct in the airless vacuum.

Again Gaunt waved his bloated arms, but the flyer showed no signs of coming toward him. . . .

He stared at it hungrily, then with a feeling of sickly horror as he saw it was only three quarters of a ship. The back half had been blown away by some force or other, blown away so completely that there was not even the derelict section trailing behind, chained by mass.

The stern rocket tubes! Suddenly Gaunt remembered Gates' message. They had been giving trouble, and if seized up—They *had* seized up! Gaunt knew enough of space flying to recognize the trouble. The explosive gases had not passed off freely; instead smashed the jet tubes and blown out the back part of the ship. And in that old pirate tub there were no safety compartments, even granting there had been time to use them. So far as Gaunt could judge, the ship's occupants must have died instantly from the sudden inrush of vacuum.

The ship was now just drifting along with its original momentum, too far away from the planet to actually reach it. The counteractive fields of the giant planets were too great. In the end it would probably halt, then drift slowly back toward Pluto and Neptune. . . .

GAUNT realized all these things with a deep inner numbness. A hundred miles or so between him and a life of constant luxury. Had he only been able to reach the ship, space suited as he was, he would have found some way to patch it up until he reached friends on other planets. All he could do now was watch the ship drift slowly away, until at last it vanished in the blaze of the stars. . . .

A deep sigh escaped him. He cursed the regulation that did not permit a man to have a spare space ship; that forced him to wait until he was freed by the ship of the relief man.

Little by little he realized his last chance had gone. He was alone on this world. Gates was dead; the radio was useless; no regular ships came out this far. The whole vast vault of infinity was empty of craft. Only the stars—the everlasting stars.

He had solved the secret of the universe, had seen a fortune and escape drift by under his nose, and now—

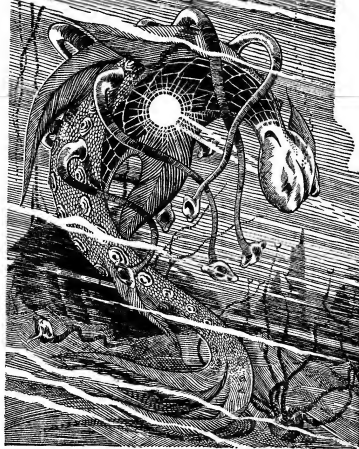
He swung round suddenly. Out of the tail of his eye he saw something happen to the observatory. Staring at it, he saw it quickly cave inward with all four walls—collapse into a vast black circle that matched the dark of space. . . .

He sat down shakily, felt curiously light headed. He knew the reason immediately. One cause was his intense emotion, and the other was the slow lessening of gravitation. As the mass of the planet was slowly converted into space the gravity correspondingly lowered. He was losing weight.

Turmoiled thoughts whirled through his brain. Stranded on a world all by himself—the victim of malign circumstances. There *had* to be a way to escape this crumbling prison! He had done nothing to deserve death, anyway. Besides—

Nothing to deserve it? Suddenly he
(Concluded on page 128)

LOST ON THE



SEA BOTTOM

Five miles down went Lan Gary and Ecum McNab to rescue Thornton Kessler, trapped in an ocean cave.

By
ED EARL REPP

CHAPTER I

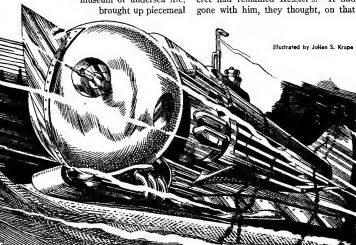
A Message From the Deep

IT was over eight months since the snapping of a slender thread of steel had severed Thornton Kessler's last contact with the world above the sea. In the little laboratory in Nova Scotia, buried from the eyes of a prying world, his work had stood right where he left it undisturbed and gathering dust.

Thornton Kessler had dreamed of constructing a submarine capable of going deeper than man had ever descended. He visioned a great museum of undersea life, brought up piecemeal

from the very bottom, from depths of three or four miles. And he dreamed of salvaging sunken ships, for money to carry on his work as he liked. In the plans for the *Rotifer* he had thought his dream accomplished. With the help of his two assistants he had built those plans into reality.

But although Lan Gary and Brinkendorf knew every rivet and plate in the huge, drum-like craft, neither of them knew what was to keep it from being crushed like an egg in the incredible pressures of the sea-bottom. That secret had remained Kessler's. It had gone with him, they thought, on that



Incredible monsters of the deep menaced their submarine

last trip.

Knowing that another month's work would see it finished, he had gone out for a last-minute's test of radio equipment to be used in the ship. He had installed special radio apparatus, of extremely short wave-length, in the laboratory and in McNab's boat, to test whether his signals could be heard from a mile down and a hundred miles away.

In a bathysphere built along the lines of that in which William Beebe* descended to the depth of a half-mile, he went down to a mile, in constant radio touch with his ship. And then tragedy struck. The slender cable, stretched beyond endurance, parted!

Thornton Kessler plunged deeper than man had ever gone, with utterly no control over his descent or direction.

But Gary had never forsaken his conviction that Kessler might still be living down there, in some cavern, perhaps, or—well, he didn't know just how he expected the miracle to be accomplished. But he had fought on while months failed to give him a ray of hope.

OUT in the shed the glittering, streamlined sides of the *Rotifer* had gathered dust, and the tracks that were to carry the bathysub down the incline into the waters of Cumberland Basin were red with rust. But every day Lan Gary would putter around in the lab or poke about inside the *Rotifer*, searching for the secret his chief had hidden too well, and every night would find him tired and dissatisfied and defeated.

Brinkendorf, assistant under Gary, had grown disgusted. Only the weekly salary that Kessler's bank account continued for them kept him there. Even Gary's vigilant hope was waning. Why he kept dreaming that Kessler, great

oceanographer though he was, could ever return from the bottom of the Atlantic he was beginning to wonder himself.

Then came the night when a rap on the door brought both of the scientists up in their chairs with a start. Lan went to the door and opened it, completely unaware that that simple act was like opening the portal into the past. . . .

There was a small, wiry little man in the homely attire of a Nova Scotia fisherman outside, the light from the interior polishing his bald, brown pate. "Aye, Mister Gary," he greeted. "It's me—McNab. I'm thinking I've got news for ye."

"Come on in, Ecum," Gary smiled. "What kind of news?"

McNab did not answer at once. He stood just within the door, looking about him slyly, his squinting eyes sparkling like bits of sapphire in the seamed brown of his face. His narrow shoulders supported a dirty old pea-jacket, and voluminous trousers hid his legs, piling up in folds on his heavy brogans. He twisted an old-fashioned, striped seaman's stocking cap in his hands.

"That feller have to hear it?" he asked at last, scowling at the heavy-set blond scientist under the reading lamp. "This here is mighty important. About Kessler."

"Kessler!" The word was torn from the mouth of each man. "What about him?" Lan demanded. "For God's sake, Ecum, if you know anything about him don't keep us waiting! You can trust Brinkendorf as much as you could me."

And off at the other side of the room Brinkendorf snorted faintly.

The old cod fisherman raised his shoulders and let them drop at that. "Here it be, then," he gave in. "Like I told you, I been hearin' weak calls on my radio out beyond the beds—not reg-

* Beebe, William, *Half Mile Down*, Harcourt, Brace, and Company, N. Y.—Author.

'lar calls, hut noises on that 'Gamma-radio' contraption he fixed us up with 'fore he left. *Today I heard Kessler talkin'!*"

SILENCE rushed into the room. Gary's whisper broke it "You heard him!"

McNah smoothed a paper out and read, his words dropping into the almost tangible hush. "Here's what 'e said: 'To Gary, McNah, or Brinkendorf. Don't know where I am, but probably canyon off New York. Cavern. Plans under shed. Help!' Just that over and over. And weak."

Dumbly, Gary lowered himself into the chair. In the few moments in which he sat there his mind flashed back over the many months.

Ecum McNah recalled him to reality. "What in tarnation you suppose 'e meant by the canyon off of New York?" he growled.

"Could he mean the submarine canyon they discovered by radio-sounding a while back?" Lan put hurriedly. "They say it has about the same dimensions and general shape as the Grand Canyon of the Colorado. * Lord knows how deep it is."

Brinkendorf rose, and his pale blue eyes flashed. "For why we stay here talking? Them plans is right where we can get them, ain't it?"

"That's right!" Lan agreed. "Under the shed, he says. That'll be the test. If we find the papers there, we'll know this is no trick."

IN the dark, damp space among the pilings of the shed they found a copper box containing the missing blueprints. Eagerly the sheets were spread out on the dining room table and scanned. Time flew swiftly as the two

scientists read and studied, and old McNah finally drifted off unnoticed.

It was after midnight when the unbelievable system of pressure-combating was deciphered. Over the table the men's eyes met, full of wonder. "I'm not hardly believing it," Brinkendorf muttered. "A centrifugal-force plan that ain't possible. And yet—I don't know."

"But it's here, in black and white—worked out to the *nth* degree. Brink, it means we've got the means of saving Kessler at last!"

The Dutchman's eyes avoided Gary's. His mouth tightened in thought. And then, pointedly, he said, "You ain't serious about going down—deeper than anything has ever gone and come back alive?"

Gary stared at him. "Of course! We have the plans—all we need to do is to put them through." His eyes narrowed. "What are you driving it?"

"They're worth a lot, them plans. A million dollars, maybe."

Lan came to his feet slowly, a puzzled, half-angry look on his features. "I don't think I like that, Brinkendorf. Make yourself plain."

The hurly, blond scientist leaned back in his chair and cocked his head on the side. "Lissen, my young friend," he said slowly, clipping his words gutturally. "This ain't a world where you live forever. You got to go sometime, and if you can enjoy life first—*warum nein?* You know as well as I that if we go down after Kessler we got a damn long chance of coming back alive. All right. He got himself in the mess, let him get out of it alone. We got the plans. We'll sell them and split. How do you think?"

Lan Gary said not a word as he crossed and dragged Brinkendorf up out of the chair. His arm swung back and then a fist lashed out, to crack solidly against the side of the other's jaw.

* *Scientific American*, March, 1938, p. 137.—Author.

Brinkendorf hit the floor with a crash. "I think you'd better get out quick," Gary breathed. "Don't ever come around here again. I haven't much use for murderers, potential or otherwise."

Brinkendorf said not a word, just glared malevolently and left to pack.

For a long while after the door closed on the man Gary stood there staring after him. It had not been the first time he had suspected Brinkendorf of treachery. He had thought before that he might know something about the disappearance of certain valuable parts of the *Rotifer*, and had found him alone in the shed several times, studying the construction of it with intense interest. His honest nature was utterly revolted at his suggestion . . . to abandon a man on the floor of the ocean, frantically calling for help.

Worried and excited, Lan finally went to get a few hours' sleep.

CHAPTER II

Into the Deep

HE found Ecum McNab pathetically eager to take the other's place in the crew of the *Rotifer*. He had been a staunch friend of the missing oceanographer, and would have given his beloved schooner for a chance to help rescue him.

But he was puzzled by the strange ship, and Lan found time in the next few days to explain it all to him. The first time Ecum eyed the big submarine he was awe-struck. "Sink me for a barnacle if it ain't a God-awful lookin' thing!"

Gary grinned and looked up at the bathysub. He had to admit it was a fantastic-appearing craft, but now that he understood its workings he could see the reason of every line of it.

In appearance it was like a very thick

wheel, one hub being the front of it and the other the rear. The front of the craft sloped back rather acutely to the stern, which came up more perpendicularly from the hub. Around the circumference of the prow was a wide glass window completely encircling it like a rim. Set into the semi-spherical nose were four large, powerful lights, and at the very back of the craft was a splayed hub containing the screws which propelled the *Rotifer*.

"It doesn't have quite the lines of your gaff-rigged schooners, does it?" he agreed. "But Kessler knew what he was doing. The pressure he was fighting is the kind that can squeeze a ship's hawser down to a rope thinner than your wrist. Four miles down he wanted to go—when the pressure at three miles is nearly ten times the pressure needed to condense air to a liquid!"

"But how does she sail!" McNab frowned.

"Like a wheel going sideways, hub first. To resist the terrific force of the water he needed something more than internal pressure, and if he tried to make walls thick enough to fight the ocean's power, the thing would be so heavy it'd drop like a rock. Only one thing could do the work—centrifugal force!"

"Ain't that like when a wheel spins so fast it throws mud behind it?"

"Behind it and in every other direction," Lan laughed. "The way we will use it is to have the ship's quarters separate from the outside hull, so that the hull can spin freely. As the pressure grows greater, mano-stats will turn on more power, spinning it faster and faster. The force created by the spinning shell, plus the strongest metal sides ever put on a submarine, will—we hope—keep us from being crushed."

"And once we get down, if we ain't squeezed flatter'n a halibut, all we got

to do is to find Kessler in the biggest canyon in the world!"

"That's all," Gary nodded somberly. "It's a day's work, but the prize is worth it."

To their already heavy worries was added the staggering blow that Brinkendorf had taken the plans with him when he left! Although Gary knew them fairly well, he could not help worrying about what the man intended to use them for. Kessler, he knew, had taken out preliminary patents on the craft, so that the ship could not be stolen, but what other scheme could lurk in the Dutchman's mind? Lan could not guess, but as he plunged into the hectic job before him, the chilling fear of what Brinkendorf's greed might lead to was always there.

It was five weeks to a day when they hauled open the door of the big shed and prepared to launch the ship.

AT the controls of the strange craft, his fingers within reach of buttons and levers that gave him power over every part of it, Lan sat and peered through the transparent band of glass that went like a stripe around the nose. Beyond the tracks were the wooded slopes of the bay, and still farther, somewhere out in the deeps, lay the great canyon in which Thornton Kessler might be waiting.

Now he turned and glanced about the interior. Every port was locked, every engine hatch was closed. His right hand pulled the accelerator back a little.

There was a smooth whirring as the drive shaft to the retractible landing wheels turned—and then they were sliding into the water. They saw the windows washed with a foaming greenish-white, and then a deeper green came up to obscure daylight completely. Lan's heart was in his mouth. Was the thing going to sink before the tanks

were filled?

Then, slowly, the bathysub ascended, until it was riding along smoothly with exactly half its bulk under water. Both men breathed easier. Lan gave it a little more power. The battery of meters before him behaved beautifully. Every needle quivered about its proper point.

He started as he realized the speedometer registered almost forty miles per hour. The *Rotifer* cut through the water like a fish! A warm exhilaration flowed through him as he settled himself more comfortably on the seat and prepared for the long trip ahead. His eyes rested on the rough blue sea stretching out ahead for interminable miles, and then, dropping his gaze a couple of feet, he could gaze through the lower arc of the window down into the cool green depths below.

The weeks that had passed had been a time of constant labor for him. From charts and mariners' accounts he had acquainted himself with that part of the ocean's floor round about the canyon until he knew every crag, ridge, and valley within an area of miles.

Too, he had spent many hours worrying about Brinkendorf. He did not deceive himself that the man would remain idle now that he had the plans. He knew enough about the bathysub to construct one himself, but once constructed, what would he do with it? Lan's jaw hardened as he told himself it would not be anything to profit humanity.

About one hundred miles off New York they slowed down and Lan set the controls while they scanned their charts. From his observations he reckoned they were about directly over the "Grand Canyon of the Atlantic," as oceanographers had called it. He looked up to meet McNab's shrewd glance. "Looks like this is it!" he an-

nounced. "From somewhere about here those calls emanated. Take a deep breath, Ecum. We're going about five times as deep as anyone has ever gone before!"

He strode back to the controls and thrust down the lever, resembling the joy-stick of an airplane, that sent the *Rotifer* down. The directional propellers immediately tilted the craft to a twenty-five degree angle. The gurgle of water entering the submersing tanks was audible. Before Gary's eyes the manometer needle started its long trip across the dial, registering fifty feet within the first few minutes.

There was not a sound from either man for a long time.

ECUM McNAB stood in the middle of the submarine and gazed up and around at the strange sights to be seen through the window encircling the "rim" of the ship. Flaming parrot fish swarmed about, and great, sluggish-seeming sharks stared in at them. The water changed color rapidly from a light green to a deep blue-green. Gary flipped on the lights and sent a brilliant white beam cutting through the murky water, spearing countless fish with it.

Now, with a sudden change of sound, the outside hull of the *Rotifer* commenced slowly to turn. From minute specks in the window ahead of him, Lan knew it was revolving, though there was no other indication than the hum of electric motors switched on by automatic mano-stats.

Gradually a low hiss built up in the interior. The air between the inner and outer casings of the craft had been stirred into motion by the spinning exterior, creating a sibilant whisper that reached every corner of the bathysub. The room grew dark as they plunged on and on. Outside it was perfectly black, only the headlights breaking the

solidness of the dark water. And within the cabin only a feeble glow existed that emanated from the dashboard.

Gradually a strange blue light seeped into the depths. "Saints!" McNab ejaculated, peering out. "What's that?"

Lan studied the peculiar, all-pervading blue light. It was light, and yet it was not illumination. It seemed less opaque than the former darkness, but he realized he could see no more inside the cabin than he had been able to before. Suddenly he blurted, "It must be what Beebe mentions that he found at a half mile down! The light that came from nowhere and wasn't exactly light either." And, glancing at the manometer, he jerked, "That's it. We're just five hundred fathoms down!"

"Five hundred fathoms!" McNab whispered, and was silent.

WHEN they had touched twenty-five hundred fathoms the spinning hull had advanced to such a terrific rate that it was difficult to steer the craft. Gyroscopic action made the *Rotifer* resist his every attempt to make swift turns. The humming was a low, shrill whistle in their ears.

Fathom by fathom, as they descended, it grew lighter! The sun's light, he knew, had been lost at about one hundred and fifty fathoms, and yet it was growing more like daylight all the time. The curious blue light, so like the light of a mercury vapor lamp, filled the ship and lightened the outside.

After a while Gary said quietly, "Three thousand fathoms. Just seven times as far down as man has ever gone before." There was a queer tightness in his voice, for he was wondering how Kessler, in an ordinary bathysphere, could ever have gone so deep.

"Three and a half miles!" McNab muttered. "I wish I had good old yel-

low pine or white oak between me and that water! They ain't never failed me yet."

Lan could not repress a laugh. "You should be thankful you don't," be assured the sailor. "They've sent wood down that far before, and when it was brought up it was compressed so it would no longer float! Every foot we go down means an increasing pressure of one-half pound to the square inch. There's about three tons to the square inch right now."

Ecum blew his breath out slowly, and went back to the window.

An hour crept by, while the bathysub crept on down to four and one half miles, deeper and deeper into the strange blue light. Without warning Lan shouted, "Look ahead! Mountains, valleys—and the *Grand Canyon!*"

CHAPTER III

On the Bottom

McNAB rushed to the port to scan the landscape a few hundred feet below. His mouth dropped open as he peered at the weird, lunar setting. High mountains heaved themselves a thousand feet into the waters above, and valleys made black depressions. The whole landscape was like one on a barren planet.

The eerie blue light threw bold shadows down the ragged slopes, causing the gaunt spires and crags to stand out in sharp relief. On beyond the mountain range was a deep chasm that traversed the ocean's floor exactly like a canyon. Toward it the *Rotifer* headed in obedience to Lan's guiding fingers.

While they strained their eyes looking ahead the canyon drew closer, until finally they were dropping down into it. A gasp of amazement parted Gary's

lips. "A—a river!" he gulped. "A river on the bottom of the ocean. Am I crazy, Ecum?"

"Not unless I am too. I can see it as plain as day, flowin' along between its banks like a frosty stream o' white water. What in the name o' Neptune is it?"

Lan was silent. Then he muttered, "I don't know, unless . . . unless it could be liquid oxygen. They say the water way down here is rich in oxygen. Why couldn't that gas be compressed at this depth into a liquid, for it only takes about five hundred and eighty-five pounds to do it? Maybe if only a few molecules in each cubic foot of water in the Atlantic were liquefied, they'd all eventually flow down to the deepest spot."

Then that wonder was swallowed up in the new thought that arose to him. "We can't grope around here for months looking for him without a clue," he frowned. "Switch on the transmitter and receiver. Even though we haven't heard Kessler calling again, maybe he'll hear us and start sending. Although how he could ever have reached this depth—"

He broke off the morbid train of thought. While McNab set the dials and rheostats he gave his attention to studying the phenomena surrounding them. The light that had at first so puzzled him now commenced to be understood. He knew that countless varieties of coral, and numerous species of fish, contain highly luminous substances in their own bodies. What became of those elements when the fish died and the coral disintegrated?

It was not destroyed on the death of the animal or plant, for he had seen dead fish still lighted by the luminescence in their bodies. Then might those minute grains of glowing substance not sink down and down, as the

fish was torn to bits, and eventually come to rest in the gray ooze at the sea's bottom? Why not? It would certainly account for the light.

They cruised along a few hundred feet above that mysterious river, buffeted now and then by cross-currents sweeping from the mouths of caverns or smaller canyons. The frigid stream went past swiftly in the complete silence. What appeared to be ice blocks, tossed on its surface, causing the liquid to take on a frosty white color.

Above them, on each side, majestic peaks and crags loomed high, seeming to frown down on these intruders from the upper world. As far up as Gary looked, he could barely see the brink of the chasm. The cliffs went up in barren grandeur, not a shrub or sea-plant marring the gaunt surface.

Into the soundlessness of the cabin broke the hum of vacuum tubes, and then McNab's voice speaking into the microphone: "Calling Thornton Kessler! Kessler, can you hear us? It's McNab and Gary. We're down here at last, and lookin' for ye. Can you hear us, Kessler?"

The transmitter's low murmur gave them its empty answer. McNab switched over again and resumed his calling. He kept talking and listening, while miles fled by on their dangerous journey down the canyon. Only the silence of ages answered them.

The *Rotifer* drifted along like a tiny boat at the bottom of the Grand Canyon, unspeakably small amid the grandeur of the mountain ranges. Suddenly it struck Gary how utterly hopeless this search was. In all this vast ocean they were searching for one man—one man, no larger than the smallest rock up there on the canyon walls!

From the amplifier came a tiny whisper: "Calling *Rotifer*! Kessler calling *Rotifer*! Gary—McNab—I'm in. . . ."

Both men leaped to their feet. As if that had been the signal the loudspeaker went dead. The sailor turned the volume on full, but the call was not repeated. Frantically they jiggled knobs and tried everything to catch the voice again. The moments raced by as they sweated over the set.

Then Gary stiffened. "Wait a minute! That call came just as we passed a huge hole in the cliff on this side. Maybe his batteries are so dead he can only get a call to us when we're that close. Maybe he's in that cavern, McNab!"

He dived to the controls and swung the ship around hurriedly. In a few moments they were speeding up the chasm once more. Ahead of them the great, black hole Lan had noticed before yawned. He steered dangerously close to it, in constant danger of rending boulders. Then they were holding their breath as the radio whispered: "Kessler. In the cavern with square mouth. Don't get too close. Current is too strong. . . ."

The warning reached them too late. In the next moment they were being sucked into the black maw with the speed of a bullet. Up, down, around they whirled and jerked, while the headlights flashed briefly over jagged walls. Both men were on the floor holding on to each other to keep from smashing into the walls.

As quickly as the sub was sucked into the cavern, it stopped its mad flight. The *Rotifer* halted and rose a few feet, then popped up and settled back—on the surface!

WITH shocking suddenness he was yanked out of his gloomy reflec-

EAGERLY they scrambled up and rushed to the ports. Through the

glass they caught glimpses of a vast cavern stretching back for miles, with a low, rough dome. Not over a hundred feet away a curving shore was lapped by tiny waves, and on the shore stood a man in ragged clothing, waving to them. . . .

It took the pair in the bathysub but a moment to beach the craft and spring out. Their eager glances raced over the white features of Thornton Kessler, as they ran toward him. He looked hale and hearty, despite his pallor. His long face was bearded, and his big frame bulked generously inside the ragged clothing.

He was almost knocked over by their hand-shaking and back-clapping. They shouted questions at him without pausing. He tried to raise his voice above theirs, but failed.

It came as a complete surprise to both when a new voice, behind them, guttural, "This is indeed a warm welcome, Meinheer Kessler. You see, all your fears about calling them were groundless. Ain't I told you how glad they would be?"

Gary whirled—and almost yelled with surprise. Brinkendorf, large and menacing, leered at them as he sat on a rock, a German Luger in his hand. "These three days I have waited," he smirked. "You have been slow, my friends."

"Brinkendorf!" Lan managed to gasp. "Then you meant business when you stole the plans— You copied the *Rotifer* somehow!"

The thick shoulders shrugged. "Of course I meant business. I still do. Otherwise I would not be risking my life down here a few miles from hell."

Kessler's quiet, grave voice, heavy with regret, broke in. "He forced me to call you," he apologized. "My own set went dead weeks ago. Batteries don't last forever. I'd rather have died

than subject you to his brutal plans. . . ." Unconsciously his fingers touched an ugly bruise across his forehead.

Hatred choked Lan. Through the angry buzzing of pumping blood that pounded through his head he heard McNab snort, "So now what, you barnacled son of a barracuda?"

"So now—" Brinkendorf turned and glanced across a rough field of reddish colored moss. Gary's gaze was pulled after his. At the base of a low hummock he saw an exact duplicate of his own ship, resting on its landing wheels. "So now we will all walk over there, remembering all the time that this gun holds enough cartridges to kill each one of you. Then I shall board my own ship, the *Equalizer*—appropriate, don't you think?—and within ten minutes I shall be gone. I will neither kill you nor disable your ship. However, I shall take the precaution of dynamiting the entrance to this cavern as I leave!"

Lan started. In his mind there flickered a faint gleam of wonder at all this, a disbelief that such inhuman greed could exist. Into his stunned consciousness filtered the harsh voice again:

"Strange, the atmosphere in these caverns. They have ample oxygen for several men for months, but once a breath of air is used—it is completely spoiled for future use. As there are no chlorophyll-type plants to convert the carbon dioxide into oxygen once more, I am afraid you will all suffocate within a few weeks!" And his heavy, rolling laugh boomed out.

Now he gestured with the automatic pistol. "Let us hurry, my friends. I have a peculiar aversion to caves—claustrophobia, perhaps. I do not envy you."

With the constantly menacing gun

on their backs they started across the field toward the water's edge.

CHAPTER IV

A Cavern of Death

AS they walked, Thornton Kessler spoke about his life here the last six months.

"Fate meant me for a different end than death by drowning, it seems," he smiled wanly. "After the cable broke I dropped as swiftly as a falling rock. When I had come down to three and a half miles water began pouring into the bathysphere. It rose rapidly, until I was just waiting for the end. The ball began groaning and wrenching as though it could not hold out another second—but somehow it held.

"Then the swift deep-sea currents struck me and buffeted me about like a ping-pong ball in a gale. Finally I saw this canyon and guessed where I was. Before long the same current that drew you in seized me. I ended up in a shallow bay a mile or two down the shore. There I have lived ever since."

McNab glanced up at him in concern. "But *how* have you lived?" he wanted to know. "Have ye eaten nothing but hardtack in six months?"

Kessler's grave, blue eyes dropped to the soft moss. "There is my food," he smiled. "I don't know how to classify it. It isn't a plant, as there is no sunlight on which it can rely for metabolism. Perhaps it is half animal and half vegetable. There are a few curious fish in the water, so animal life is possible down here."

"I'll have to admit I've never seen you look healthier, aside from your pallor," Lan said soberly. "How do you account for that, under such privations?"

"Lack of bacteria, probably. They can't live in the deep sea as you know,

so they couldn't have got this far down. No—it takes something more vicious than a *bacillus streptococcus* to cause death down here."

His remark plunged them back into the problem at hand. Deliberately they had avoided it. It was not pleasant to think of suffocating down here. Somberly they thought of the horrible possibilities in the unnatural climate. Without bacteria dead bodies would stay forever the same, lacking only that vital spark to distinguish them from the living. The idea of being the last man occurred to them all. Alive, forced to live with the bodies of his dead friends—afraid to bury them because they seemed so alive, afraid of madness if he did not.

THEN they were balting outside the *Equalizer*. "Here we must part," Brinkendorf said curtly. "I go back to the world of sunlight, to realize the profits of my—er, industry. I leave you to whatever the bottom of the sea may hold for you!"

He backed to the open door of the bathysub, climbed in . . . and started off with the closing of the port. The wheels bounced heavily over the soft terrain.

Kessler's hopes died with the wilt of his body. McNab cursed silently. Then Gary seized their arms and dragged them with him toward the shore. "Now's our chance!" he cried. "He'll hit the water in a minute and can't see us so clearly. But we'll beat him to the draw by getting out as he sets off the charge!"

"If we can," Kessler rejoined. "He told me he improved over my own ideas on the sub. Perhaps we'll be too late—"

"We can try," Lan gave back grimly, and quickened his pace.

The *Equalizer* was a fast-moving silver speck in the water as they climbed into their own craft and headed back

into the water. Once more foaming water boiled about the windows of the ship. Now they were on equal terms with Brinkendorf. Now only speed could save them!

BUT when the headlights of the *Rotifer* sprayed the roof of the tunnel with light they saw their predicament. Against the rocky ceiling an ordinary, large rubber balloon was held by helium or hydrogen gas. Something sparkled below it. It was a small silver ball from which a stream of sparks were spilling.

Gary sprang onto the submersion lever, a shout on his lips. "We're diving!" he cried. "Hell's going to break loose any second!"

Scarcely had the bubbles of their sinking broken when the explosive brought the ceiling down in a caving roar. Mud and rocks joined in a black cascade raining into the still water. Before the window of the *Rotifer* a black curtain descended, blotting out everything from the frightened men's eyes.

Jarring thumps buffeted them about. The blood drained swiftly from Gary's lips as he clung to the controls with the courage born of desperation. Through a night as black as the Coal Sack* they tore to safety—or death. Their jaws were clamped hard on their fear.

And then, all at once, they had shot through the landslide to clear water.

Kessler sagged onto a chair and mopped his brow. McNab stood at the port, looking out, thinking, perhaps, of the death that he had missed.

But their relief was a doomed one. Into the cabin lashed the voice of Brinkendorf. The radio had been left on. It rolled his sonorous tones ominously through the silence.

"My friends, you were clever. Are you clever enough to escape the flame

I am about to send around you?"

With a single accord they crowded the windows. In the same second they saw him. They gasped, watching the little bubble of white flame on the nose of the *Equalizer*, waiting just outside the tunnel, grow into a serpentine tongue of death.

Kessler was shouting now. "Don't let it touch us, Lan! It's an acetylene torch, powerful enough to burn through the hull of the ship!"

Lan shoved the submersion lever against the dashboard. "I know it. But he's got to catch us, first."

With his quiet words the bathysub shot down, almost scraping the *Equalizer*. Power throbbed through the ship's beams. Ecum and Kessler crouched beside the tight-lipped pilot. The eyes of the sailor were on the gleaming hull visible above them, the gaze of the scientist on the quivering needles. And in their different ways, all three men were praying.

Something like a half minute passed before an alien light filtered into the cabin, growing in brilliance as the pursuing craft cut down the distance between them. Gary's eyes were on the meters. "How close?" he muttered.

He could read the answer in Kessler's returning gaze. He did not wait for him to speak, but swung the *Rotifer* into a swift turn. Like a falling leaf they dropped through a long spiral toward the river of death down below.

There was a glimmer of hope in their eyes when Brinkendorf's low chuckle chilled them again. "There is always this way, of course," he told them. "Death in a river of liquid air might be preferable to death by pressure. The choice is yours."

THEY dropped on. The hull of the ship screamed at unbelievable speed as the manometer needle crawled past

*An utterly starkos portion of space where nothing seems to exist.—Ed.

five miles, drew nearer to six. There was a glistening film of sweat on Lan's brow, and once he had to reach up and wipe it out of his eyes. Swinging the ship suddenly away from the river and toward a still deeper canyon cutting off from the main one, he answered their unspoken question.

"We're heading for disaster that way. If the river is liquid air, the water for a quarter of a mile above will be frozen. I'll try to lose him in the canyon we're heading into."

Fear increased in their hearts with the light that seeped through the ports again. Glancing back, Gary saw a long, waving tentacle of flame lashing out at them only fifty or sixty feet in the rear. Brinkendorf started to laugh.

"Getting tired of it, Kessler? You have only to—"

"Shut that damned thing off!" Lan shouted. "It makes me want to put her about and take him with us, in one grand crash!"

McNah's finger dropped the mocking laugh into silence.

Towering, irregular walls now replaced the vast expanse of the Grand Canyon. Great rocks bristled in the cliff walls, a constant menace to the ship; but in their threat Gary found hope. Perhaps Brinkendorf would not care to risk his life in such speed as they were putting on as they plunged into the tortuous chasm.

He found he was wrong. Ecum McNah laid a hand on his shoulder. His voice came strongly, untainted by fear. "It's the end, boy," he said without trace of regret. "If it's all the same with you two, I'm casting my vote for the idee you just mentioned—puttin' her about and close-haulin' into his path!"

"No—there must be a way!" Lan cried, and instantly felt childish for his useless protest. He looked around to meet Thornton Kessler's gaze.

"How about—" He broke off, tore his gaze back to the window. The rocks were going by at unbelievable speed. A glance at the speedometer showed they had increased in speed from twenty-five miles to thirty-five!

"Some freak current," he muttered. "It must be, because Brinkendorf's speeded up to match our rate." Then he jerked rigid on the pilot's seat. "We haven't lost," he breathed. "No, we've got a chance still. I don't know how much—but grab the wall girders and hold on!"

Clawing fingers carried the depth lever back until it was probing his stomach. The hull screamed its protest at this crass defiance of gyroscopics. They shot up and felt themselves hurled back into the current as the loop reversed their direction. Like a powerful net, the all-encumbering current tore at the *Rotifer* with fingers of steel, slowing it down to ten miles an hour!

The motors howled with the unwonted strain of the fifteen-mile current. Lan set the controls and stood up. "It's our bid for life," he told them gravely, swaying about as the ship jerked this way and that. "There's one chance in a hundred that we'll come through safe."

Silently he went to the window and glanced back. The others joined him. Sweat stood out on their faces as they waited.

Behind them the *Equalizer* was just climbing up into a vertical turn, its silver hull shining under the rays of the deadly flame. Even from here it could be seen to slow down. It rocked and bounced in the speedy current. Lan whispered, "Now!"

The word was a signal of violence.

As the hathsuh came into position behind them, the long tongue of acetylene flame was seen to waver and flutter in the swift current, bending back like a

candle flame in a breeze. The *Equalizer* plowed on, faster, deadlier, closing up the gap—and suddenly the flame was forced back until it brushed the silver hull!

Audible above the whine of motors and spinning hull were the men's startled gasps. Only Lan did not seem surprised. He stood there quietly, leaning against the curving window, watching a great, mushroom-shaped bubble burst from the craft behind them. . . .

For the deadly heat of the oxy-hydrogen flame had melted a tiny fissure in the side of the ship. Tiny—yet big enough for the first drop of water that would let in the bottom of the ocean.

The *Equalizer* seemed to disappear from their gaze. They could see only a million little sparkling lights dancing about like diamond chips in the sunlight, as the window glass sifted through

the water. Then a round, flat shape turned towards them and the bathy sub, crushed as flat as a dollar, went spiraling down into the darkness of the canyon floor.

Brinkendorf had gambled and lost.

There was no time for joy, no opportunity for congratulations. Time only for Lan to dive on the controls and snap the *Rotifer* up in a forty-five degree climb toward the sun.

But his boyish grin flashed over his shoulder at them. He was hearing Kessler's grave words come through the awed hush.

"There have been strange things happen in the deeps of the ocean," he told them. "But the strangest of all is how three unarmed men in an inferior ship could defeat a man armed with fire and greed. It almost makes me proud of my helpers—it does at that!"

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THE PHANTOM ENEMY

(Continued from page 103)

many of you along with us as possible before we went out . . ."

"Whew!" The space policeman chuckled. "I'm glad I had this uniform on. But you needn't worry about Mose any longer. One of the guard ships got him, coming out of the dust cloud—he and his whole crew were nearly nuts, and they offered no resistance. They'll not raid any more ships. And now, if you don't mind, I'll take *you* along. Your cargo is being transferred to the E243."

As they followed the uniformed figure to the forced port which led now to the airtight contact tube and the police ship. Powers sought Vera's hand.

"I know it isn't polite," he said lowly, "but do you mind if I whisper something in your ear?"

"No," she returned, blushing slowly.

He brought his mouth close to her ear and his lips moved sibilantly, but distinguishably.

She flushed happily, then: "Yes," she whispered back.

THE WORLD THAT DISSOLVED

(Continued from page 113)

recalled Curt Vernol, and with the recollection came a vast wave of bitter self-reproach. He did not regret slaying Vernol; he'd been too inquisitive anyway—but he did curse himself for a fool for having fired him away into the void in his ship. He had thrown away his one means of escape. . . .

Thrown away everything!

Dazedly, he stared at the hole. It was expanding with terrific speed. The small hills ringed it round. It was advancing inexorably toward him. Before long the planetoid itself would crack in half.

Death was inevitable. Gaunt realized it now—but *death*, when he had expected so much! He fancied he could hear Curt Vernol laughing at him. Perhaps his spirit still pervaded this crumbling world—

Gaunt shook himself. This was pure fancy. Things had gone against him, yes, but in a perfectly logical fashion. But that did not make matters any better.

Suddenly he was calm again, faced the situation. He had done wrong: he realized it now. But he was still a scien-

tist, and he still had the courage that had led him to take this lonely job and at the same time defy interplanetary laws. Even if his private aims had collapsed, even if he had committed cold blooded murder, he still loved the profession that was closest to his heart.

Mastering himself, he tugged a safety cylinder from his belt, removed the curved plate from within it and started to work with the stylus. There was no reason why science should not know of the thing he had discovered. Someday, perhaps, the cylinder would be picked up—granting it missed being annihilated when the planetoid collapsed.

At last he had finished his message, packed it carefully into the cylinder, then fired the small rocket attached to it. In grim immovability he watched it soar away into the darkness above him.

He looked back at the hole, smiled twistedly. At any moment now the whole planetoid would break in pieces.

Slowly he got to his feet, slid down the black rocks, walked steadily toward that abysmal circle.

The eternal stars watched him go.

VALLEY OF INVISIBLE MEN

BY

EDMOND HAMILTON

Tracks magically appeared in the moonlit sand, advancing toward him! Great paw-prints, one after the other, approaching him slowly, made as though by a phantom beast. He was to fight an INVISIBLE JAGUAR! "Goodbye, Mark Bradford!" came Joseph Negrin's mocking call, from above and behind him in the amphitheatre.

The paw-prints halted, ten feet away. Mark could almost SEE the great beast hunching to spring. Then fire sand flew up from the tracks as the invisible animal launched through the air at him. . . .

Don't fail to read the amazing story of Mark Bradford, who ventures into the Valley of Invisible Men, on a secret mission for the United States Government, and in search of a Shining God of mystery. What he finds there plunges him into an unknown world of adventure.

★ ★ ★ ★ ★

VENGEANCE FROM THE VOID

By Frederic Arnold Kummer, Jr.

For twenty years the dead body floated in space, then came Marcus Thain and his daughter, Anna, to accomplish an amazing resurrection. Then came a weird revenge.

THE CITY THAT WALKED

By Ed Earl Repp

Scully was a rascal, and he had no compunctions against holding over Cort Hardin's head the threat of exposure. But when he tried to use Hardin's coral invention. . . .

★ ★ ★ ★ ★

THE STRANGE FLIGHT OF RICHARD CLAYTON

By Robert Bloch

The space ship shattered as it took off for Mars, and long years were consumed in a terrible voyage where madness threatened. Then the ship ceased shuddering and Clayton came forth, his flight culminated.

MAROONED OFF VESTA

By Isaac Asimov

The ship was a torn and mangled wreck, pursuing an orbit about Vesta, near, but impossible to reach. They had only three days air supply. But Warren Moore had an idea, and he dared the void to carry it out.

★ ★ ★ ★ ★

THE RAID FROM MARS

By Miles J. Breuer

A sodium-starved world sends raiders to earth to steal the precious element. But the armies of earth attack are repulsed with great losses, and then, the inexplicable. . . .

REVOLUTION ON VENUS

By Bradner Buckner

Free hunters of Venus, they were, then came Oak Harbald, to institute his ruthless rule over Hiss-Ponds. It was high-handed robbery, and Venus rose in revolt.

★ ★ ★ ★ ★

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QUESTIONS and ANSWERS

This department will be conducted each month as a source of information for readers. Address your letter to Question & Answer Department, AMAZING STORIES, 908 S. Dearborn St., Chicago, Ill.

Q. Will you please tell me the position of Mars, Jupiter, Saturn and Venus? Please tell me where I can get a not too expensive star map.—Stanley Varlas, Weirton, W. Va.

A. Counting outward from the sun, the planets occur in the following order: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto. We have referred your inquiry concerning the star map to our science book department. Any desired book or scientific work can be obtained in this manner by writing us.

Q. Will you please tell me why a propulsion machine would work better in space than in our atmosphere; how you could stop a rocket at the moon or any other destination; and the method by which a rocket is operated.—Sylvester Brown, Jr., Cambridge, Mass.

A. Beyond the atmosphere there would be no friction to hold the ship back. If you have ever driven a car on a windy day, you will realize that the air does possess a potent dragging power on a moving vehicle. Also, in space, gravity attraction would be greatly reduced, and rockets would be vastly more effective. Rocket ships will be halted either by turning the ship and firing the rockets of the destination thereby halting the ship just as it was started, or by firing forward rockets. The same force that is used to drive the rocket is used to halt it. Rockets are operated by feeding a mixture of fuel into a firing chamber, just as in an automobile, and exploding it with a spark gap. This is the only practicable way, since a continuously firing rocket, as a fireworks rocket, would be impossible to control. Also, danger of exploding the whole fuel supply is eliminated, since only that injected into the firing chamber would detonate.

Q. Will a metal (steel) ball sink into the ocean just so far, or will it go to the bottom, no matter what the depth?—Alfred K. Parks, McAllen, Texas.

A. Since steel is denser than water, and assuming the ball is solid metal, it will sink to the bottom, no matter what the depth. Many people believe ships do not sink to the bottom, but this is not so. Even in the case of wooden vessels, they become water-soaked and reach the bottom.

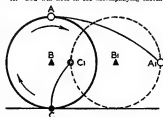
Q. What is ether?—Margaret Coyle, Milwaukee, Wisconsin.

A. It is the medium through which, according to the wave theory, radiations like light are transmitted through the void. Since ocean waves are

water waves, and sound waves are waves in the air, it seems logically to follow that light waves, radio waves, cosmic waves, etc., must be composed of something, so in lieu of exact knowledge science imagined a medium they called the ether. There has been much doubt cast upon this imagined ether by experimenters who have failed to detect its presence with delicate instruments, but its existence has not been disproved, and the facts of light radiation demand some medium, and we call that medium ether.

Q. Is it true that the upper part of a wheel moves faster than the lower? How can this be? The wheel is all in one piece, and it couldn't move at different speeds. Please explain.—Charles Hernandez, Corpus Christi, Texas.

A. You will note in the accompanying sketch



that we have plotted out the relative movements of three points on a wheel (a wheel rolling along a track). Point A, at the top, moves along the curve indicated to point A1 with a quarter turn of the wheel. Point B moves straight forward to point B1, the actual distance the vehicle to which the wheel is attached has moved forward. Point C moves to point C1, also along a constant curve. You will notice that the curve above the hub line is longer than that below, thus indicating even to the eye, the truth of the fact that the top point on a wheel's rim moves faster and further than the bottom point. This phenomenon is recognized by photographers, who have stopped action on swiftly travelling wheels and proved that the top spokes blur, while the bottom spokes clearly stopped.

Q. How far does the earth travel in making its orbit around the sun?—J. K., Tacoma, Wash.

A. On its annual trip around the sun, the earth travels a total of 584,600,000 miles, and makes 1,601,604 miles each day.

SCIENCE QUIZ

We present the following science questions and problems for your entertainment, and at the same time as a pleasant means of testing your knowledge. How many can you answer offhand, without referring to an authority? Par is 70% correct.

SCIENCE TEST

1. The largest type of bear is: Cinnamon, Polar, Grizzly, Kodiak, Brown.
2. The curvature of the earth, per mile, is: 12 feet, 200 feet, $\frac{1}{2}$ inch, 60 feet, 8 inches.
3. The mass of earth's atmosphere is: one-tenth that of the earth, $\frac{1}{620th}$ that of the earth, no more at all, one one-millionth that of the earth, two times that of the earth.
4. The solid earth is called: the hydrosphere, the stratosphere, the lithosphere, the photosphere, the atmosphere.
5. One of the following is an erroneous statement: The planet Mars has two moons, Mercury has none, Venus has one, Jupiter has nine, Saturn has nine.
6. Salt is used with ice to freeze ice cream because: salt hastens the freezing process, salt and ice are combative elements, salt increases the density of the ice, salt lowers the temperature of the ice by its mixture to 24 degrees Fahrenheit, salt melts the ice releasing the cold.
7. Two hundred pounds can be lifted into the air by a gas bag containing the following amount of helium: 120 cubic feet, 400 pounds, one square yard, 3,200 cubic feet, one standard U. S. helium cylinder-full.
8. Nitrous oxide is: an explosive, laughing gas, a corrosive chemical, the film that prevents oxidation of aluminum, a metallic catalyst.
9. Fuller's earth is: a pottery clay, a heat-resisting material, a medicinal earth, a hypothetical dimension, an extremely fertile soil.
10. Radium loses half its value in: six months, 100 years, 1,000 years, one billion years, 28 years.
11. Glycogen is: a kind of syrup, concentrated glycerine, an explosive fluid, animal sugar, a bitter herb.
12. Common bricks are made red by the presence in the clay of: impurities, red ochre, iron pyrites, iron, copper.
13. The hardest stone known is: granite, diamond, ruby, carbonate, marble.
14. Pure amber can be detected as such by: rubbing it vigorously, stroking a cat's back with it, tasting it, holding it close to your ear, hitting it with a hammer.
15. One of these statements is untrue: A fly makes 350 wing strokes a second, a bee 240, a wasp 110, a termite 150, a dragonfly 28, a butterfly 8.

TRUE OR FALSE

1. The flea is a small wingless insect. *True.... False....*
2. A fox marked with a dark line along the spine and another over the shoulders is called a cross fox. *True.... False....*
3. The dormouse, badger, bat, and hamster hibernate during the winter. *True.... False....*
4. Forgeries of famous paintings may be detected by photography. *True.... False....*
5. The star, Alpha Orionis, is a cold star. *True.... False....*
6. Light from the moon takes 1.2 seconds to reach the earth. *True.... False....*
7. When the upper limb of the true sun, as corrected for refraction, is in contact with the sensible horizon of a place, it is sunrise. *True.... False....*
8. Jupiter is 3 and 4/11ths the mass of Saturn. *True.... False....*
9. When cotton is placed in caustic acid, it turns a light yellow color, whereas linen will turn brown. *True.... False....*
10. The diffusion of a weaker solution into a more concentrated one is called amalgamation. *True.... False....*
11. Gasoline has no lubricating qualities, although it is a byproduct of oil. *True.... False....*
12. Rain water is chemically pure. *True.... False....*
13. There is not more than ten ounces of radium in the world. *True.... False....*
14. A dead glacier is one that has melted. *True.... False....*
15. The source of the Mississippi river is four miles lower than its mouth. *True.... False....*

STRIKE OUT THE WORD THAT DOES NOT CONFORM

1. Ruby, emerald, agate, sapphire, diamond.
2. Piccolo, flute, clarinet, cornet, bassoon.
3. Green, blue, violet, light blue, red.
4. Scarlet geranium, heliotrope, holly, mistletoe, sunflower.
5. Persimmon, quince, nectarine, oselachan, lemon.

SCRAMBLED SCIENCE TERMS

1. A metallic element. **PEPROC**
 2. Contained in food. **MANITIV**
 3. An animal. **ECOOTY**
 4. A bird. **WROPARS**
 5. A super intelligent man. **SENUGE**
- (Answers on page 144)

Meet the Authors

J. HARVEY HAGGARD

THE LIGHT THAT KILLS

SIX feet three. Twenty-five years. Weight, 175. Brown eyes. Blond hair. Of ordinary appearance.

First became aware of the Martian planet by reading Burroughs' Martian series when in early teens, and became so enthusiastic over John Carter's method of transportation to the ruddy world I tried it myself. (Didn't work.)

The nearest I ever got to it is in losing myself in the realms of science fiction.

Have little faith in reincarnation, yet hope that if it is true will some day be reincarnated in a zuzubogon or a hippomiloto on the crimson world. (Then what tales I'd have to tell to my little grandchildren zuzubogons and hippomilotos?)

Was born on Mark Twain's birthday, November 30th, in the Shepherd - of-the-hills country, later migrated to California, to discover that they don't use gold pieces to pave the streets, and took a course in typewriting at school when I discovered it was worth a whole credit and was a snap. What a combination! I was helpless in the hands of fate. Disjointed stories began rolling in unending procession from my helpless fingers, while I looked on, aghast at the monstrosities leaping from the keys of my ancient Underwood.

At length I would retire to my Physics class, in which I was totally absorbed. My instructor was very appreciative. He avowed that if my brains were made of physics, they wouldn't phisic a flea.

Fans frequently inquire if I'm related to the renowned H. Rider Haggard. It is possible that I am, in a remote way, if family records are to be believed.

Nevertheless, thrusting aside all attempts at

Author of



J. HARVEY HAGGARD

humor. I had that one redeeming characteristic which is so very necessary to a science fiction writer. I had a sincere faith in interplanetary travel, in the future development of atom motors, gravity repulsors, and many other of those things we term scientific dreams of today. Without that faith and confidence in the future, I doubt if any person could write sincerely and convincingly. These narratives are based on solid, scientific facts. They are as real as the tomorrow that is to come, as substantiated as the yesterday that is just past, and so near that we can almost reach out and grasp them in the present.

In my research for "The Light That Kills" I was immediately fascinated by the knowledge that every incident as described might actually have happened just as written in the light of our present scientific knowledge.

Hemateporrydysin is fatal to white animals in sunlight. Injected into a white mouse, he is all right so long as he lives in the dark. Taken into the sunshine his skin begins to itch and burn. The ears, nose, and other hairless or thinly covered parts turn red and the mouse scratches his body and rolls on the floor to ease the irritation. Soon

he shuts his eyes and sinks into a comatose state. Why couldn't this same thing be done in the human system? True was the Bard of Avon prophetic when he wrote, "There are more things between Heaven and earth than dreamt in your philosophy." J. Harvey Haggard, San Bernardino, Calif.

he shuts his eyes and sinks into a comatose state.

Why couldn't this same thing be done in the human system? True was the Bard of Avon prophetic when he wrote, "There are more things between Heaven and earth than dreamt in your philosophy." J. Harvey Haggard, San Bernardino, Calif.

WARNER VAN LORNE

Author of

WANTED - 7 FEARLESS ENGINEERS!

I WAS born thirty-six years ago, in a little mountain village, in the Adirondacks. (Too small to mention the name.) My first interest in life was a reaper and binder, as to how it used up

bundles of grain. Before I was ten I knew and understood the operation of all farm machinery.

I tried to absorb all of the mechanical science possible, and learn what made a model T Ford run by the time I was fifteen (and started driving one about that time).

I completed school, but was unable to go to college and study engineering as I desired. Instead I had to absorb my engineering knowledge at home, by reading everything that I could find. I experimented with everything in sight, until I had learned a lot by trial and error.

Following this I did quite a bit of mechanical designing, for different small companies, always following my interest in science. I read Edgar Rice Burroughs' Martian stories with relish, and every other book of the type that I could find. Science-Fiction magazines were included in this and I absorbed everything in sight. I read some of his stories in the old "Amazing."

When I was going to school, I won a children's contest by writing a short story similar to "Gz" stories, and received a war saving stamp as a prize.

It was not until the past five years that I seriously took to writing, and have sweated over a typewriter ever since. It is hard work, but I like it, and intend to keep it up (if the editors will let me). When I write I smoke, although about four-fifths of each cigarette burns up on an ash tray, while I smoke the other fifth. Someday I might smoke a pipe, but I haven't got there yet.—*Warner Van Lorne, New York, N. Y.*

* * * * *

ED EARL REPP Author of
LOST ON THE SEA BOTTOM

I HEARTILY agree with that brilliant science-fiction writer, Frederic Arnold Kummer, Jr. when he wrote in the October issue that "when-ever a writer is asked for a biography of himself he is, in most cases, on the spot." There never was a truer word spoken if I can judge the hundreds of writers I personally know, by my own reactions. With few exceptions, they generally hate like the devil to talk about themselves for in most cases they live deep within their imaginations and their lives are usually unromantic, being apparently dedicated to one purpose . . . to get that gnawing feeling to write something worthwhile out of their systems.

It is that strange, overpowering urge that makes a writer battle through reams of bond striving to create something from nothing and hymen rarely if ever realize the amount of work and sweat that goes into every story written. I have written steadily without a stop for sixteen hours, yet my best friends, non-writers, will insist that we scoundrels live on beds of roses! It's duck soup, they say. All you have to do is set down, knock out a few words and collect editorial dough! I'd like to put it up to every writer contributing to AMAZING STORIES or any other publication and get their views on this bed of roses business.

It is admitted that most writers take a great

deal of pride in their work, for after all, they are like inventors building great things from a bare inspiration. They have something to brag about in most cases, but they rarely do. They pour out their souls on paper, break their backs over the type mill and most of them will admit that even eight hours a day steady work is downright labor at best. And have you ever heard a pick and shovel man finding anything romantic about digging a ditch? The two kinds of labor, although one is mental and the other physical, are brothers under the skin, particularly when a writer gets in what they call "the doldrums" when nothing he writes pleases him and a mountain of balled bond rears up around his desk. It is hard work, my friends, as hard as any you'll find in this world or any other. You look at that mountain of crumpled paper and you wonder . . . is there anything romantic about it? There might be, but I've never met a writer yet who could find it!—*Ed Earl Repp, Van Nuys, California*

* * * * *

EANDO BINDER Author of
VALLEY OF LOST SOULS

THE idea for "Valley of Lost Souls" came to me one day when I saw a plane's-eye view of a high mountain range. Some of the valleys nestled in the mountains were cloaked with mist, just as this valley might look from the air. The caption said that some of the mountain-pockets are seldom free of this mist, so presto!—why not a valley containing a hoary secret? Also, legend has it that "white Indians" once dealt with the ancient Mayans, so that tied right in with the idea of the Atlantes coming to America from their soon-to-be-destroyed continent. The gold angle is probable also, since there are unnumbered tales of "buried" treasure that have never been unearthed. Thus, it was really a delving into the legends and myths of the past and weaving them into a story pattern. The idea of having Atlantis destroyed by men instead of nature always strikes me as logical. Look at the way present-day measures of warfare are increasing in power and destructiveness. The day may yet come, makes reason sways mankind, when battling nations may come up with atomic-power and forthwith try to wipe their enemies off the face of the earth. Lastly, to get away from the telepathy cliché, I spent some thought when writing the story on how the modern people would converse with the Atlantes, and decided on root-speech. This is not as illogical as it may seem. A good linguist can almost intuitively grasp the meaning of any modern language, because there are so many roots of common origin. These may all have originated from one source—and for purposes of the story, it is Atlantis.—*Eando Binder, New York, N. Y.*

* * * * *

MORRIS J. STEELE Author of
THE PHANTOM ENEMY

THERE are things in space we don't even dream about. Outer space is a mystery. It has interplanetary debris in the form of meteorites, strange

rays may wreak havoc on human beings; and there may be conditions far beyond what we imagine.

Whether we will encounter anything unknown out there is not a supposition, but a certainty. What these unknown things will be, we won't know until we find out by actually sending a space ship out there.

Thinking along these lines, I began to picture to myself one peculiar condition which might exist, and how it might be used in a story. The result was "The Phantom Enemy" and I think I've got a real phantom there. What would happen to a shipload of men, I asked myself, if they heard a strange whisper beyond the hull. Something living out there—it couldn't be, or at least our present day knowledge leads us to make that assertion. Whether there can be life in the void or not, I don't profess to say. However, I was greatly intrigued in the writing of "The Phantom Enemy" and I must admit that even my own hair stood on end as the weird thing whispered from beyond the hull, from the cold void where no living thing was supposed to be able to exist.

I hope the readers like the story, and perhaps I'll get another idea someday that will offer me the opportunity to weave a story of the future as I think it might be.—*Morris J. Steele, New York, N. Y.*

WILLIAM F. TEMPLE Author of **MR. CRADDOCK'S AMAZING EXPERIENCE**
I WAS born in 1914, in Woolwich, London, almost alongside the great Woolwich Arsenal. Night after night the German zeppelins came over trying to get this Arsenal, and once a bomb landed in the next street and killed an entire household. So my earliest memory is of getting under a table in a darkened room during a raid, thinking it some sort of game and quite enjoyable. But since then, my attitude toward war has changed a little.

Soon after I could read, I discovered the works of Wells, and his flights of fancy developed my imagination where "education" had failed. I had an ambition to bring some of his scientific marvels into reality, and went to study engineering at Woolwich Polytechnic. One day, 3 years later, I caught myself trying to screw a cold chisel into the jaws of a drilling machine, with my mind marked absent and wandering somewhere in a remote Wellesian world of fantasy. Obviously I was not practical-minded enough to become an engineer. I took to office work, became a departmental clerk in the London Stock Exchange, where I still am.

Presently I began scribbling short fantastic yarns in my spare time, of which one blunderer called "The Kewo" found its way into a book of such stories. It's so unconsciously funny

that I can never re-read it quietly. Another was accepted by the old **WONDER STORIES**, but W. S. changed hands before it was published. After some more failures, I took to writing crime stories, in which the murdered victim was generally an Editor.

Then Walter H. Gillings brought out the British s-f mag., **TALES OF WONDER**. I had two stories published in that: "Lunar Lilliput," and more recently, an unusual one called "The Smile of the Sphinx." But by this time I had got myself completely entangled in the coils of the Science-Fiction Association and the British Interplanetary Society, becoming Editor of the B. I. S. "Journal," co-Editor of the "Bulletin" and "Novae Terrae," and complaining possessor of so many other posts that Rossini's Figaro would have torn up his little ditty and howled his head in shame.

Am now sharing a flat in London with two prominent and highly strung British s-f fans, Maurice K. Hanson and Arthur Clarke, and running favorite in our own domestic "Wobbel-Gonuts-First" sweepstake.—*William F. Temple, London, England*

POLTON CROSS

THE WORLD THAT DISSOLVED

Author of

THAT old question, which came first, the chicken or the egg, has its counterpart in science with the enigma of which came first, matter or space. I've wondered long about this question, and have developed some interesting theories.

Recently I got to thinking about the subject, and hit on an idea that grew in my mind until I suddenly realized I had an interesting basis for a science fiction story. We all have heard of novae, and how they have puzzled astronomers. They are generally conceded to be exploding stars, which flare up into unimaginable brilliance for a short time, then fade out again, sometimes completely vanishing.

What happens when a star does that? Certainly a lot of commotion goes on; things happen which mean the emission of an awful lot of strange radiations, energy, and what have you. Generally we accept as fact that radiations travel at the speed of light, and I have taken this assumption in my story, to explain the arrival of the unknown radiation from the nova coincidently with its visible explosion.

In order to get around the fact that the rays would alert all they struck, if they affected anything at all, I had to devise this unique observatory in space with its super-powerful telescope to concentrate the radiations. Once started, the resulting phenomenon continued its ravages.

As for the rest of the story, I've tried to make a dry scientific subject as interesting as possible, and I hope I've achieved the purpose of all fiction entertainment.—*Polton Cross, London, England.*

DON'T MISS THIS AMAZING TREAT!

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THE EDITOR'S OBSERVATORY

(Continued from page 7)

THE argument about how long man can live has a lot of angles, and many supporters from all these angles. The Bible contains a very comprehensive record of the ages of Adam and all his descendants, to the time of Noah. Methuselah was the record-holder with his 969. But all of them without exception lived for a much longer time than any record-holder of today.

We have the school of thought which says the years in those days were shorter. This is obviously not to be considered by seriously thinking scientists. It would take colossal forces to slow down the revolution of the earth about the sun in those few short years (about six thousand years from the time of Adam). Certainly catastrophe would result, and there would be no life on Earth. Nor is there anything in the solar system which could have caused the change.

Another school of thought suggests that the year as it was reckoned then was much shorter than now, perhaps was reckoned by the moon. This would be most credible except for one thing. The Bible mentions harvest seasons explicitly, and ties them up with the years. So obviously they were the same sort of years we have now.

Then, what has happened to man to cause him to lose the ability to live over half a thousand years, and even as long as ten centuries? Why don't men live today to such an age?

Certainly this is a question that demands a bit more serious thought than is being given to it. Apparently we have a right to live longer than we do, and also the latent ability to do so. And who of us wouldn't want to live 969 years? Your editor, for one, would welcome the chance.

Scientists tell us old age is caused by the deposit in our body of materials that clog the veins, and the vital organs; a substance that is not removed by some glandular action as are other types of impurities and poisons. Is this a signpost pointing to the truth, that somewhere in our body is a gland which has become atrophied, or weakened, so that it does not function to its full extent, thereby robbing us of our just right to long life?

If that is true, then it is equally true that we can do something about it. We needn't die before our time, strangled by a poorly or non-functioning gland. Long life is a matter for the scientist, and it is entirely within his sphere to make it once more a reality.

Certainly we have enough factual evidence to prove to us it can be done. It

will, and must be done. Perhaps even now, some obscure human being gropes blindly along a path that will suddenly reveal the whole secret.

NO doubt many of us get up in the morning, fling wide the window, draw in a deep breath, and go through our daily setting up exercises. We believe in exercise for the development and health of the body. And we do something about it. But few of us know yet about a new type of exercising which doesn't take place before the open window.

More recent developments in exercising the human body have gone beneath the surface. By means of radio frequency waves, it has now become possible to exercise the human heart. Weak heart muscles are stimulated and toned by regular periods of exercise according to the pulsation of a definite and beneficial radio frequency.

Not only does this exercise do for the heart muscles what your morning exercise does for the muscles of your legs, arms and torso, but it aids in the function of the heart, relieving the strain of normal action in a damaged heart, and allowing the damage to repair itself.

This is not the only use radio waves are being put in in our modern hospitals. Treatments of diseases which require fever heat in internal organs, to eliminate dangerous germs and irritated conditions, also involve radio frequency. Internal fevers, beneficial to the diseased part, and lacking the "burning out" effect of a fever which kills the whole body, are caused by these same waves.

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DISCUSSIONS



AMAZING STORIES will publish in each issue a selection of letters from readers. Everybody is welcome to contribute. Bouquets and brick-bats will have an equal chance. Inter-reader correspondence and controversy will be encouraged through this department. Get your letters in before the 15th of each month.

A TRULY GREAT STORY

Sirs:

I have just finished reading the January issue of AMAZING STORIES and there is no doubt in my mind as to the greatest story. It was "I, Robot" by Eando Binder. This was a truly great story, written by a truly great author. It held me spell-bound to the last page.

Blaine R. Duessire,
414 Washington Ave.,
Charlottesville, Penna.

AN OCCASIONAL "CLASSIC"

Sirs:

I endorse Eshbach's plea for a Taine serial? Surely you can give us at least one if that masterful writer has accumulated six, all unpublished. No one who has read it carefully can ever forget "The Time Stream." I met science fiction through Eshbach, a former acquaintance of my father's, but nothing so personal makes me want to see Taine in AMAZING again.

An occasional "classic" is all many of us read you for. So count this as a vote for Taine, and, if fervent sincerity can make me triplets, three for Weinbaum.

W. J. Gorniey,
Torpedo Squadron Five,
Naval Air Station,
Norfolk, Virginia.

JAMES AND MARY ROGERS AGAIN

Sirs:

This letter is mainly one of congratulations on the current AMAZING. I liked the background of your cover but I can't say so much about the foreground, which should be the most important. Why on Earth does Fuqua put that insane wire like a halo around the head of the robot? It looks most unnecessary. The back cover was excellent. Why don't you let MacCauley do a front cover?

"I, Robot" was excellent. Battle In the Dawn was superb. The Scientific Ghost and Black Empress were interesting. I didn't like Interplanetary Graveyard, although the plot was new, because of the character of the Martian. He was said to be a coward, and he was supposed to envy the more handsome earthman, when the Martians should have their own standards of beauty. And anyway, why make him a coward?

Mary Evelyn Rogers.

Sirs:

The January issue of AMAZING is fine. Best story for interest is Battle In The Dawn. Every story held my interest, a feat unequalled in any other mag for three years at least.

The magnetic rocket train on your back cover is very pretty, but I understand that magnetic induction tends to oppose motion—the very speed of the ship would tend to slow it and thereby lower its efficiency in the long run. Propeller is better than a rocket in dense atmosphere anyway. Please print scientific only!

James Michael Rogers II,
2006 Court St.,
Muskogee, Oklahoma.

● AMAZING STORIES seems to be in solid with you both. I guess, Mary, the author made Gava And ugly and cowardly so as not to arouse sympathy for the villain. Anyway, you make no mention of the fact that the Martian thought the girl very beautiful, which would seem to indicate the standard of beauty doesn't change so long as the author assumes both races are "human." And James, what about an electric motor? Does magnetic induction oppose motion there?—Ed.

Sirs:

"Battle in the Dawn" is obviously inspired by Wells' "The Grizzly Folk," but is nevertheless quite enjoyable, and goes much further than the latter did. Very realistic, too. One rather strange point was that the supposedly mentally inferior Neanderthals had perhaps a thousand people living together in something resembling peace and harmony, whereas the Cro-Magnons dwelt in small tribes little, if any, larger than families.

"I, Robot" was also good, though here we have a case of the story being even more like another. "The Lost Machine," I believe was the name of its earlier counterpart; it was in AMAZING at about the time of "The Jameson Satellite," and was very much like this "I, Robot." Some resemblance might also be noted to "Of Jovian Birth."

John A. Bristol,
5134 Condit Road,
Washington, D. C.

● If your editors recollect correctly, the Neanderthals were grouped together in a temporary camp preparatory to marching against their enemies. Normally they lived in small groups in caves. It was from these caves that the family first en-



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Neither was he writing an action story. Perhaps he wasn't even trying to be entertaining. He was writing a psychological study of a man who was a superman, a mutation of the future, trying to fit himself into our modern-day civilization, our enjoyments, our occupations. In short, Weinbaum wrote a serious novel, which constitutes quite adult reading, and requires an adult insight and understanding of psychology and human behaviorism.

Quite definitely, this is not anywhere near "pulp newspaper" fiction. It's adult fare. To be quite frank, your editors were fascinated by it, and absorbed in its psychological revelations. Ah, you will say (some very few of you), that's what we want. We are not ordinary "pulp" readers. We don't read for slam-bang action with ray-guns, manly heroes rescuing fair damsels from the ferocious people of Venus. And psychology is a science.

Here I must partially disagree. In the majority, you want action and thrills. Some few of you are avid science fiction fans who from childhood have absorbed every bit of science fiction, and remotely science fiction material, and hungered for still more. Certainly you would like this psychological work. But *AMAZING STORIES* is not read only by the two or three hundred in this category. The magazine is successful because of those other thousands of readers who greatly outweigh the few. We have absolutely no assurance that these thousands will not condemn us for running something they have no desire to read.

Thus, it would seem that *AMAZING STORIES* cannot prevent "New Adam" to its readers. The answer is simple, the readers haven't proved to us that a majority want it. In quite the reverse, the vast majority has signified a definite "no."

We even considered publishing it as a separate and single publication, but again, it's not newstand. And as a book, to be sold to our readers, we also lack support. Certainly we can't present a book to just a few hundred readers. No publishing company likes to lose money.

AMAZING STORIES has earned the reputation of giving its readers what they want. And by readers we mean the majority of the readers. Does this answer your definite question about the "New Adam," Mr. Mike?

About Paul. You will soon be seeing him in *AMAZING STORIES*. We have contacted him, and are arranging for his early appearance in the magazine, and also on its cover. Once again we answer the pleas of a number of readers with sufficient volume to convince us of majority rule. But this doesn't mean that Krupa and Fuqua will not continue as before. The readers have definitely settled that—Ed.

FINE SELECTION

Sirs:

Thank you for the fine selection you picked for the January content. John Russell Fearn's novelette "The Black Empress" is a story that don't take long to read, because of the high key of

interest. Binder comes thru again with another "new slant" story. It's interesting to note how a totally "different" story can come out of a different slant on a regulation idea. Glad to see the return of Stanton A. Coblenz. Hope you can succeed in persuading him to return to his annual book-length. Krupa's illustration for "Death In The Tubeway" is reminiscent of Paul.

Your answer to the letter of H. V. Ross in Discussions on the use of stories other than science fiction is quite alarming. I am all for a wide variety of science fictions ranging from the more adventurous types to the more scientific types with the greater bulk being in between. Even Merritt's fantasies without their scientific explanations are welcome so long as they are within reason, but as to using weird, bizarre, supernatural stories—nix. I like them fine, but they belong in a different magazine—away from science fiction.

Why is AMAZING dated two months in advance instead of the usual one month? Is this due to an error that crept in when we went monthly? If so, about the only way to correct it is to have two issues with the same month date such as February A, and February B.

AMAZING will soon start its 14th year. I suggest that you reproduce on the back cover of the first issue of the 14th year, the front cover of Vol. 1, No. 1.

I prefer a set type style to the variety now used for the interior story titling. A very neat set up is that used for "Prince Deru Returns" in the Dec. issue. The title in bold black lettering completely on the first page of the story with the illustration on the opposite page. Double spreads could be inserted in the middle of the longer stories, also if it is desirable at times to use them at the start of stories, a standard lettering (used throughout the issue) off of the illustration would appear neater than the present arrangement.

Jack Darrow
3447 N. Francisco Ave.,
Chicago, Ill.

● We don't intend to use weird, bizarre, or supernatural stories, and we are sorry our reply to Mr. Ross gave that impression. We were definitely thinking of "The Moon Pool" and others of that category.

AMAZING STORIES is dated in the same month as other science fiction magazines, but is issued at the beginning of the month to conform with the other publications of Zid-Davis, Popular Photography, Popular Aviation, and Radio News. Nor did the error as you call it, creep in when we bought the magazine. We continued the policy instituted by the former publishers. Going monthly resulted in the apparent change, but actually, none was made. We still come out on the same day of the month as previously.

Yes, we are completing our 14th year, as the oldest science fiction magazine. Naturally we are quite proud of this record, and we do propose to present a gala issue in celebration. Watch for this issue. It will be very interesting to all our

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thing missing." Let's do something about it.

Bob Tucker,
Box 260,
Bloomington, Ill.

● Glad you like the back covers so much. This feature has proven to be the most popular of our "reincarnation." Mr. MacCauley will continue to present his work from time to time, due to the enthusiasm with which his work has been received.

The article on the Time Capsule was very well received, and we'll endeavor to present other articles of this nature from time to time.

We hear a lot of talk among the fans as to the Discussion department being the most interesting part of the magazine. Now you come along and point out something missing. Apparently you like a column devoted to letters by readers who have something definite and significant to say. We print almost every letter of that type we get, so, if something still is missing, then it must be the reader's fault. Perhaps you yourself can place a letter in the category of Murray, Crouch, Clark, Moskowitz, etc.?

This department is intended to be controversial, and we certainly appreciate the attempts of our readers to help make it more so. What do you other readers say? Anything significant stirring around in your heads? Put it down on paper and let the rest of the Discussions gang have a try at tearing it to pieces.—Ed.

HE'S DOWN ON LOVE!

Shut:

I had almost given up hope that *Amazing Stories* would again reach the standard set by the third issue. However, when I opened the January AS, I was startled out of a rather lackadaisical mood by reading in the Discussions that you were going to get sex out. Whoopee!! At last you're going right.

The top story is "Battle in the Dawn" by Mark Wade Wellman. If that story isn't a classic, I don't know what is. Certainly, I'll remember it when the other yarns are but dim, hazy dreams. What a yarn!

There seems to be a tie for second place between "The Scientific Ghost" by Ed Earl Repp, and "The Black Empress" by Fearn. In "The Scientific Ghost," there was no love, and the story didn't drag because of this.

The plot was well built up, and it was a story well worth reading. The other story, in spite of the science, was fantastic in a way which only Fearn reaches. Of course, I knew right along that he was going to have the hero get the girl, but just the same, the story was entirely readable.

For third place, I nominate "Death in the Tube-way" by Stanton A. Coblentz who happens to be a favorite of mine. In fact, I still remember "In Caverns Below" and "The Man of Tomorrow." And, I'm going to applaud even louder due to the omission of a love interest.

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CONCEIVED AND DESIGNED BY JULIAN S. KRUPA
(See Back Cover)

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However, no great progress was made through the ages, and even up to the day of Columbus, ships were tiny, crude things of wood, often at the mercy of the elements. It was only until comparatively modern times that water travel really became an amazing form of transportation.

Today, great liners ply the oceans, monster metal battleships as large as fortresses protect coastlines from invasion, and giant freighters carry a staggering amount of tonnage.

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But we have pictured the future mistress of the seas, the ultimate development of travel by water. On our back cover, we present the super liner, the streamlined, weather-proof, speedy ship of the day to come.

Streamlining has become the byword of civilization's progress. No longer is the ungainly, the awkward, the unbeautiful allowed to render imperfect any of man's creations. And so too, will the ocean liner take to streamlining.

Let us picture this future queen of the seas. Certainly she will present a stirring picture of beauty as her sleek streamlined, brilliantly painted hull flashes across the water at speeds that seem almost impossible on water. Shaped, on top like an elongated teardrop, she will ride in the water like a seal. The waves will slip smoothly around her thick metal sides, having no effect whatever in the magnificent steadiness of her progress. The most violent wind will not buffet her, but sweep smoothly over her non-resisting rounded lines.

Aboard her, no one will be seasick, but will remain absolutely unconscious of the fact that underneath their feet is a rolling, tossing ocean of water. Even those few who do succumb to the type of seasickness derived merely from observation will be easily cured, or rendered immune by medical science.

Nor will there be any possible comfort, convenience, or luxury absent, which could be obtained ashore. Large, house-like staterooms will be air-conditioned, kept at constant and healthy temperature, brightly lighted by beautiful sunlight retaining its beneficial ultra-violet rays. Magnifi-

cent salons and dining rooms will provide the most excellent of foods. A giant ballroom, theatres, gymnasiums, swimming pool, and spacious gaming and observation decks will provide the ultimate in entertainment.

A portion of the ship will be roofed over with vit-a-glass, and beneath its clearness, a warm summer day will reign, no matter what the inclemency of the weather beyond the hull. This giant ship will make its own weather, cooling the blasts of tropic heat, and nullifying the cold of arctic seas.

In fact, the passenger will constantly enjoy the comforts and pleasures of a veritable isle of heaven, a miniature world, complete in every detail, floating on water.

Mechanically, the ship will be perfection itself. Powerful engines, each geared to its own plant screw, will push the ship through the water with ease. A dual rudder system will provide complete control. Knife-like keel will cut the water at great speed, with a minimum of wash. A triple-thick metal hull will provide complete safety from disaster. Sinking will be virtually impossible, without blowing the whole ship apart.

Even in the event of attack, rocket-launch lifeboats will provide a means of escape, even after sinking. These boats can be launched away from all danger of suction, and will be powerful enough to reach land on their own initiative.

Streamlined tunnels will provide both vapor escape and ventilation facilities. Divided, they will not occupy valuable space in the center of the ship, but will allow for a spacious ballroom far beyond the size of any today.

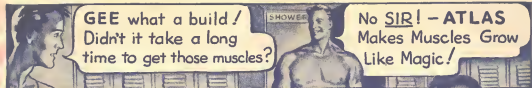
Air-conditioning equipment will cool the ship in the tropics, producing copious quantities of fresh, cool air, cleared of impurities, germs, and gases. The same equipment will become a heating unit in colder climes, with the same cleansing performance still holding good.

Stabilizers will hold the keel perfectly even, even in a gale, and a hurricane would cause but little inconvenience.

In size, this queen of the seas would not be much larger than the liners of today, perhaps, nor would her speed be increased greatly. However, it would advance to the point where its giant capacity would still provide stiff competition for the swift air-liners which may flash by above it. Certain it is that she would need to dip no colors to any superior means of crossing the ocean. She would indeed be mistress of all she surveyed, an inspiring sight to the eyes of man, her creator.

A man-made world on water, as complete, as comfortable, and as efficient as any globe that whirls through the void of space, and as independent.

Someday soon we will ride such a ship as this!



GEE what a build!
Didn't it take a long
time to get those muscles?

No SIR! - ATLAS
Makes Muscles Grow
Like Magic!

Will You Give Me 7 Days to PROVE I Can Make YOU a New Man?

LET ME START SHOWING YOU RESULTS LIKE THESE

**5 inches
of new
Muscle**

After ONE WEEK my
arms increased $1\frac{1}{2}$ " chest
 $2\frac{1}{2}$ " forearm $\frac{1}{2}$ " - C. S.,
W. Va.

**What a
difference!**

"Started a
week ago. Have
put $3\frac{1}{2}$ " on
chest (normal)
and $2\frac{1}{2}$ " expanded."
F. S., N. Y.

**Here's what ATLAS
did for ME!**

**John Jacobs
BEFORE** **John Jacobs
AFTER**

**For quick results
I recommend
CHARLES
ATLAS**

"Am sending snapshot of won-
derful progress. Certainly recom-
mend you for quick results."
W. G., N. J.

**GAINED
29
POUNDS**

"Your method gives
long, smooth muscle.
When I started, weighed
only 141. Now weigh
170." - J. K., N. Y.



**CHARLES
ATLAS**

A recent photo of
Charles Atlas—
twice winner and
holder of the title
"The World's
Most Perfectly
Developed Man."
This is NOT a
studio picture but
a simple enlarge-
ment made from
an ordinary small
snapshot. No
muscles "painted
on" or retouched
in any way. This
is Charles Atlas
as he looks today!

7-DAY TRIAL OFFER

I could fill this whole magazine with enthu-
siastic reports from OTHERS. But what you
want to know is—"What can Atlas do for
ME?"

Find out—at my risk! Right in first 7 days
I'll start to PROVE I can turn YOU into a
man of might and muscle. And it will be the
kind of PROOF you (and anyone else) can
SEE, FEEL, MEASURE with a tape!

My FREE BOOK tells about my amazing 7-DAY TRIAL OFFER—an
offer no other instructor has ever DARED make! If YOU want smashing
strength, big muscles, glowing health—I'll show you results QUICK!

FREE BOOK

I myself was once a 97-pound weakling—sickly, half alive. Then I dis-
covered "Dynamic Tension." And I twice won—against all comers—the
title, "The World's Most Perfectly Developed Man!"

I have no use for apparatus. "Dynamic Tension" ALONE (right in your
own home) will start new inches of massive power pushing out your chest—
build up your shoulders to champion buskiness—put regular mountains of
muscle on your hips—free you of constipation, pimples—make those
stomach muscles of yours hard ridges!

Make me PROVE it! Gamble a postage stamp. Send coupon for my
FREE BOOK AT ONCE! Address me personally: Charles Atlas, Dept.
9A, 115 East 23rd Street, New York, N. Y.

**Sterling Silver Cup
Being Given Away**

This valuable cup of solid
sterling silver, stands
about 14" high on a
black mahogany base.
I will award it, engraved, to my pupil who
makes the most improvement in his develop-
ment within the next three months.



**CHARLES ATLAS, Dept. 9A
115 East 23rd Street, New York, N. Y.**

I want proof that DYNAMIC TENSION will make a
new man of me—give me a healthy, husky body and big
muscle development. Send me your free book, "Everlasting
Health and Strength"—and full details of your 7-Day
Trial Offer.

Name

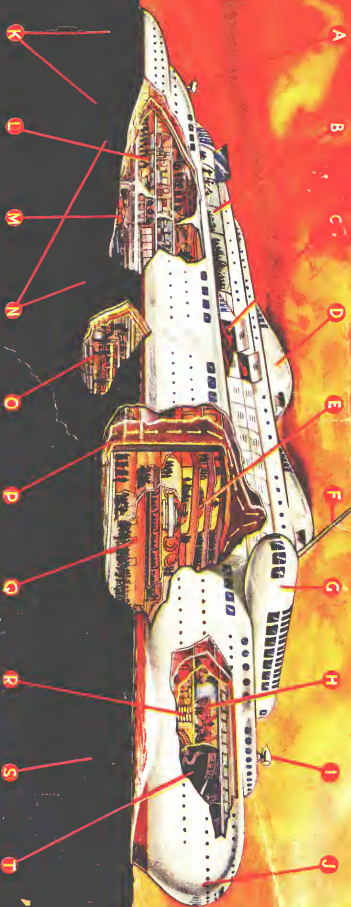
(Please print or write plainly)

Address

City..... State.....

FUTURE OCEAN LINER

This Giant Ship Will Be A Complete World In Itself As It Skims The Oceans



All the still of science will go into this sleek greyhound of the seas. Completely enclosed in a streamlined, weather-proof hull, it will be absolutely independent of outside conditions. Unsinkable, in fact, because of triple hull construction, it will be storm proof. No longer will high seas and buffeting winds retard speed. Super powerful engines will drive it through wind and water on an even keel. Seasickness will be a rarity, and medical science will provide instant relief for infrequent sufferers. A vitiless enclosed deck will provide perpetual warm-climate weather, brilliant sunshine about cold winds, comfort even in storm. No more will waves wash the decks, but simply over gleaming metal and glass. Perhaps not much increase in size will be attempted, but speed will be increased over the fastest existing records of today, seem commonplace. Every comfort and convenience will be available. The world on water. See page 145. Copyright, AMAZING STORIES, 1938.

- A Two-way television antenna
- B Vita-glass enclosed sun deck
- C Rocket-launch life boats
- D Streamlined funnel & ventilator
- E Observation & pleasure decks
- F Radio broadcast antenna mast
- G Master control deck
- H Forward salon & gymnasium
- I Fog penetration search light
- J Teardrop streamlined bow
- K Dual rudder system
- L Main stateroom decks
- M Automobile & storage hold
- N Four-unit engines & screws
- O Engine rooms
- P Dual divided funnels & vents
- Q Grand salon & ballroom
- R Forward storage hold
- S Triple-shell hull
- T Moving picture theatre