THE DEADLY SLIME by F. A. KUMMER, JR.

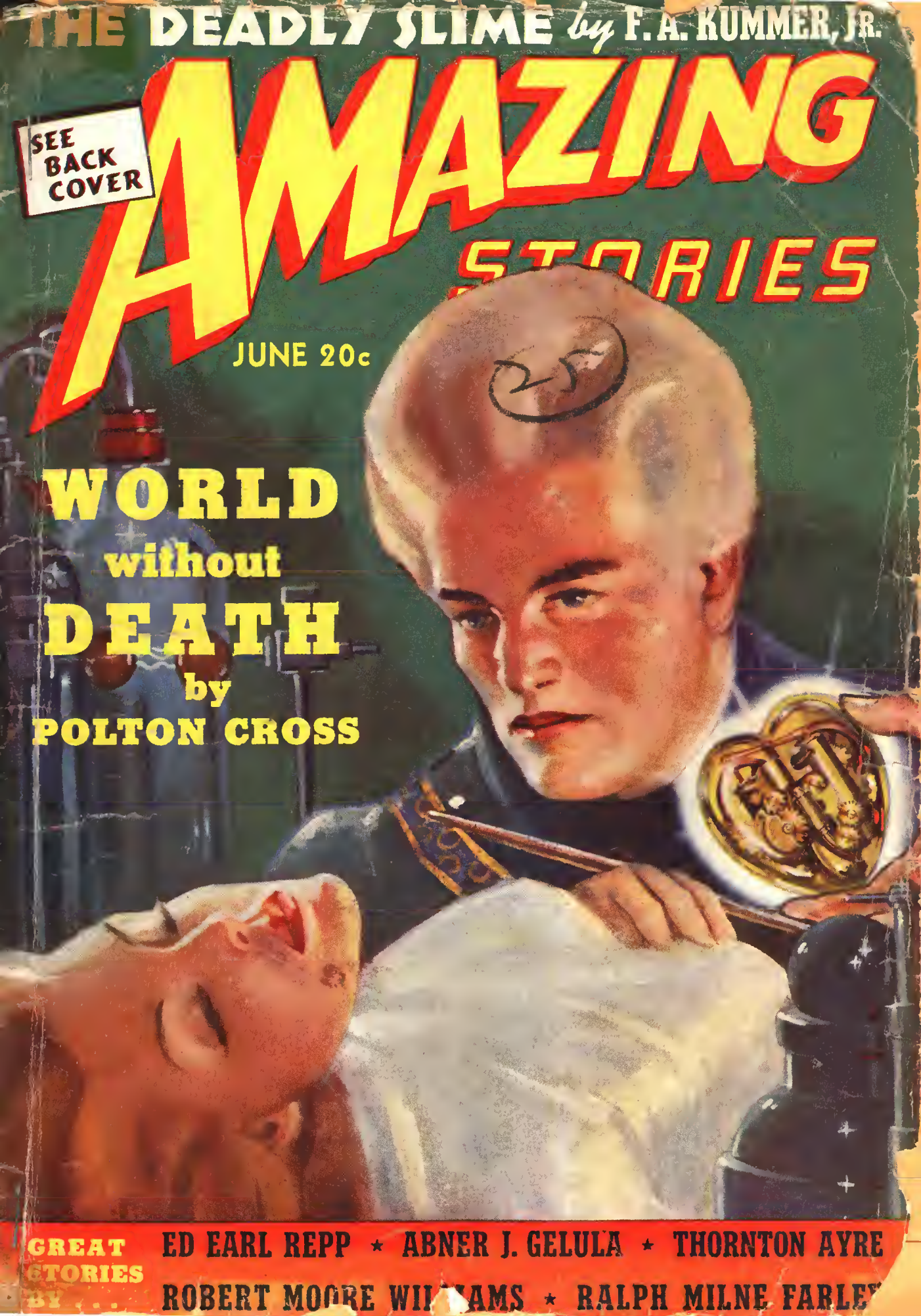
SEE BACK COVER

AMAZING STORIES

JUNE 20c

WORLD without DEATH

by POLTON CROSS



GREAT STORIES BY . . .

ED EARL REPP ★ ABNER J. GELULA ★ THORNTON AYRE

ROBERT MOORE WILLIAMS ★ RALPH MILNE FARLEY

DANDRUFF can be MASTERED

Listerine Antiseptic kills the stubborn germ that causes dandruff

DAY after day they come . . . a steady stream of letters, from every part of the country . . . unsolicited corroboration of a *fact* demonstrated in laboratory and clinic—dandruff *can* be mastered with Listerine Antiseptic!

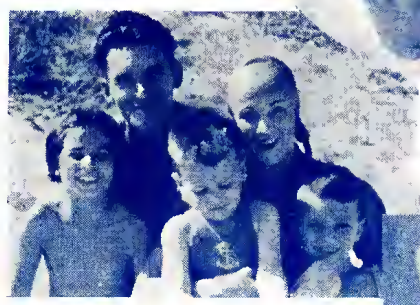
Sensational new disclosures definitely prove that dandruff is really a *germ disease!* . . . caused by the stubborn bacillus Pityrosporum ovale!

A wealth of scientific data now clearly points to *germicidal* treatment of dandruff. And clinics have proved that Listerine Antiseptic, famous for more than 25 years as a germicidal mouth wash and gargle, *does* master dandruff . . . *does* kill the dandruff germ!

In one clinic, 76% of the patients who used Listerine Antiseptic twice a day showed either complete disappearance of, or marked improvement in, the symptoms of dandruff within a month.

Now comes this overwhelming corroboration in countless enthusiastic letters. Read these few typical examples, and start your own delightful Listerine Antiseptic treatments today. Even after dandruff has disappeared it is a wise policy to take an occasional treatment to guard against reinfection.

Lambert Pharmacal Co., *St. Louis, Mo.*



"Last year my husband had a bad case of dandruff. Nothing he tried seemed to do any good for it. Finally I persuaded him to try Listerine Antiseptic. At the end of three weeks his dandruff had completely disappeared. Now we all take a Listerine Antiseptic treatment once or twice a month 'just in case,' and we haven't had even a suggestion of dandruff since."

MRS. ERWIN CARLSTEDT
Box 507, Boynton, Fla.

"Since using Listerine as a preventive for dandruff, I really feel safe as to my appearance in public."

HENRY W. SCHIETER
Oshkosh, Wis.

"The most effective treatment for dandruff I ever tried."

MRS. S. C. SLOAN
West Palm Beach, Florida

"After the first treatment my hair stopped falling out, and dandruff was practically gone. Since that time I have used nothing except Listerine Antiseptic on my scalp."

MRS. PAUL NESBITT
Chama, New Mexico

"After the first application the intense itching stopped."

MR. JOHN KEESER
Walden, N. Y.

THE TREATMENT

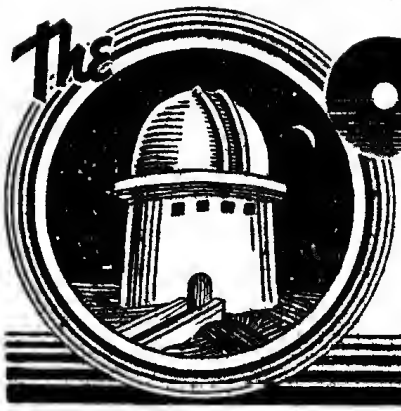
MEN: Douse Listerine Antiseptic on the scalp *at least once a day.* **WOMEN:** Part the hair at various places, and apply Listerine Antiseptic right along the part with a medicine dropper, to avoid wetting the hair excessively.

Always follow with vigorous and persistent massage. But don't expect overnight results, because germ conditions cannot be cleared up that fast.

Genuine Listerine Antiseptic is guaranteed not to bleach the hair or affect texture.

Accepted Good Housekeeping Bureau

LISTERINE ANTISEPTIC
the proved treatment for **DANDRUFF**



The OBSERVATORY by THE Editor

YOUR editor feels confident in predicting that you'll find this issue of AMAZING STORIES one of the finest issues you've read in a long time. And in future issues, you'll find yourself being treated to unusually good stories. Just to give you a hint, this month we present Abner J. Gelula, author of that near-classic, "Automaton," which was the first pulp science fiction story ever to be sold to the movies. He has written another one that tops anything he's done. You'll like "The Whistling Death." And several of our short stories, this month, are classed by their authors as something they feel proud to have written. We believe they are right. If you don't find yourself in a quandary when you try to decide your Merit story for this issue, we'll eat your hat!

* * *

AS this issue goes to press, your editors are scanning advance copies of AMAZING STORIES' new sister magazine, and we can't help puffing up a little with pride. Here's a science fiction magazine that will make your eyes pop out, it'll be so fitting as a companion to the magazine you've already claimed couldn't be made better. Where AMAZING STORIES gives you the best in solid, down-to-earth science fiction, FANTASTIC ADVENTURES gives you the best in fantasy, and off-trail science fiction, with a real tang of adventure. How any science fiction fan can keep from making his science fiction menu complete by reading this absolute coverage of the field will be hard to imagine. You'd better make it your motto, "Cover the field with AMAZING STORIES and FANTASTIC ADVENTURES." Take a tip from a fan who's always been "one of the gang."

* * *

THIS month we received such a flood of mail for the Discussions department, and a lot directed solely at the editor, that we feel that AMAZING STORIES really hit the spot with its April issue. Fuqua carved a niche for himself in science fiction's hall of fame with his sensational cover. Thornton Ayre went on to prove his hold on one of the upper rungs of the popularity ladder. Krupa continued to show his originality, and his amazing progress toward the title of leading science fiction illustrator. And your editor got so many coupons, all nicely filled out, stating in no uncertain terms just which features were liked best, that from now on, deciding on the contents of the magazine is just going to be a matter of "musts." We want to thank all those readers who did so splendidly in reacting to our questionnaire. And out of the whole thing we do get one little bit of information that tickles us. Even a science fiction fan will cut out a coupon from his precious magazine, when duty calls. That's proof enough for us.

* * *

JUST to demonstrate some of the results, we forecast a cover in the near future by that old favorite, Leo Morey, who has sent us in a splendid sketch in response to our urgent request. A stack of marvelous manuscripts have reached our desk, proving definitely that the old-timers have come to life and are swinging into action to once more defend their laurels as of old against hard-pressing newcomers. Paul has come back with his first back cover on AMAZING STORIES, as you've probably already noticed. He's scheduled for more, including front covers. And—but whoa! We've got to hold back a few secrets for next month.

* * *

WILLIAM VENEY, of Sydney, Australia, writes: "I have noticed that Australia is not present in Discussions these days. Why?" Well, it probably is because our magazine reaches you so late. And too, it may be that Australia isn't writing as many letters as formerly. Come on, you foreign readers, let's have your opinions too.

* * *

MR. VINCENT A. TABOR comes through nobly in commenting on that problem of how old Methuselah was. He says: "Adam begat Seth at the age of 130 years. Counting a year as a month this would be 10 years and 10 months, according to Mr. Goldman." (Mr. Goldman said the years were probably reckoned by the moon, and a month long.—Ed.) "It must also be remembered that he had two sons *before* that, which would make him rather young for the responsibilities of parenthood. In the 21st verse we find that Enoch became the father of Methuselah when 65 years old, or, according to Goldman logic, five years and five months old. Seems hardly a biological possibility, does it? Perhaps the longev-

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Cover painting by William Juhre, depicting a scene from World Without Death
Back cover by Frank R. Paul

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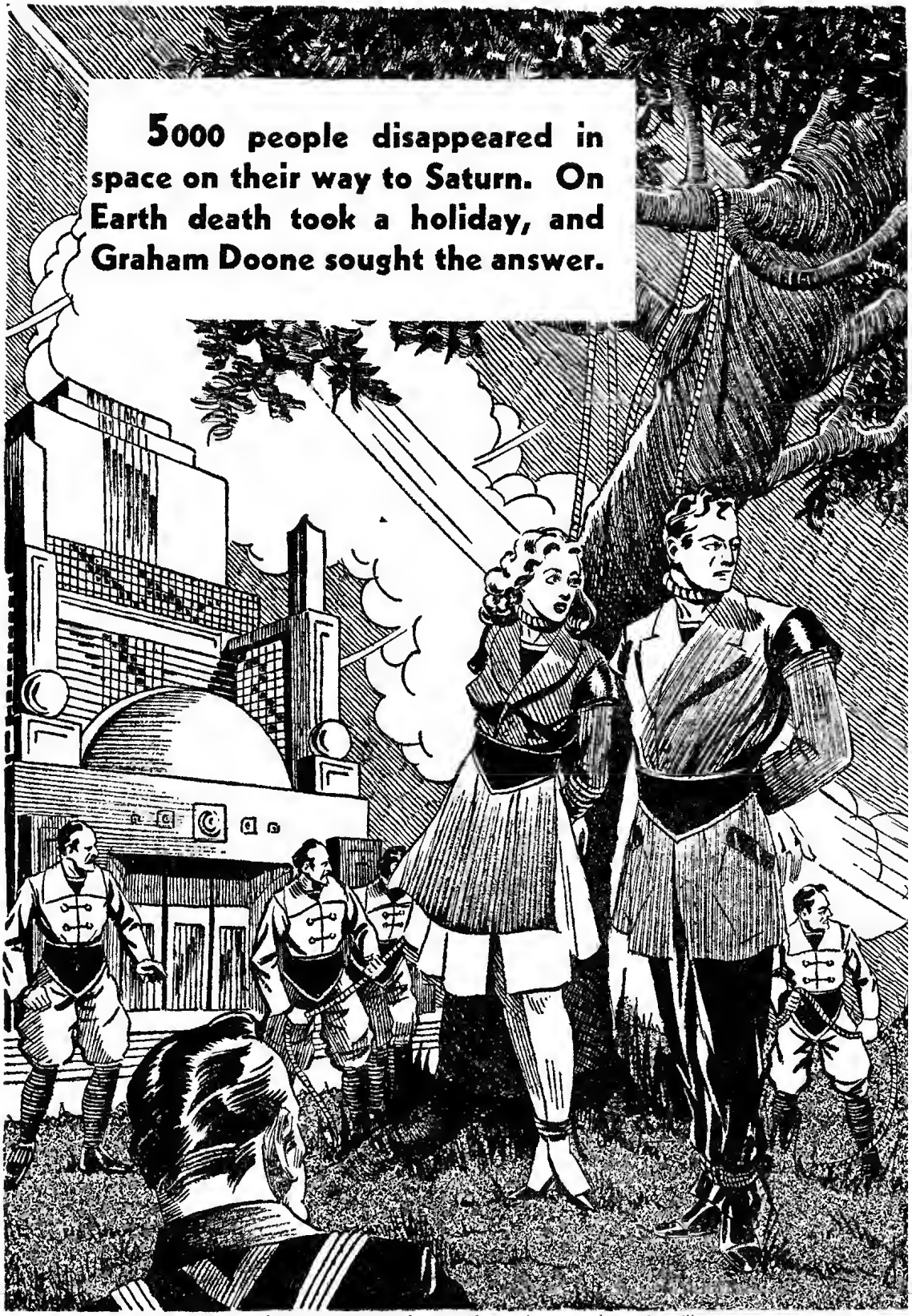


"Hang them!" came the shout. "String 'em up, the traitors!"

WORLD Without DEATH

By Polton Cross

CHAPTER I
A Scientist's Secrets

IT was the weeding out of scientists and inventors that brought to light the quiet, slender Janice Milford—scientific theorist par excellence, a girl who had apparently crammed into her youthful life more scientific knowledge than a clever man could manage in a full lifetime.

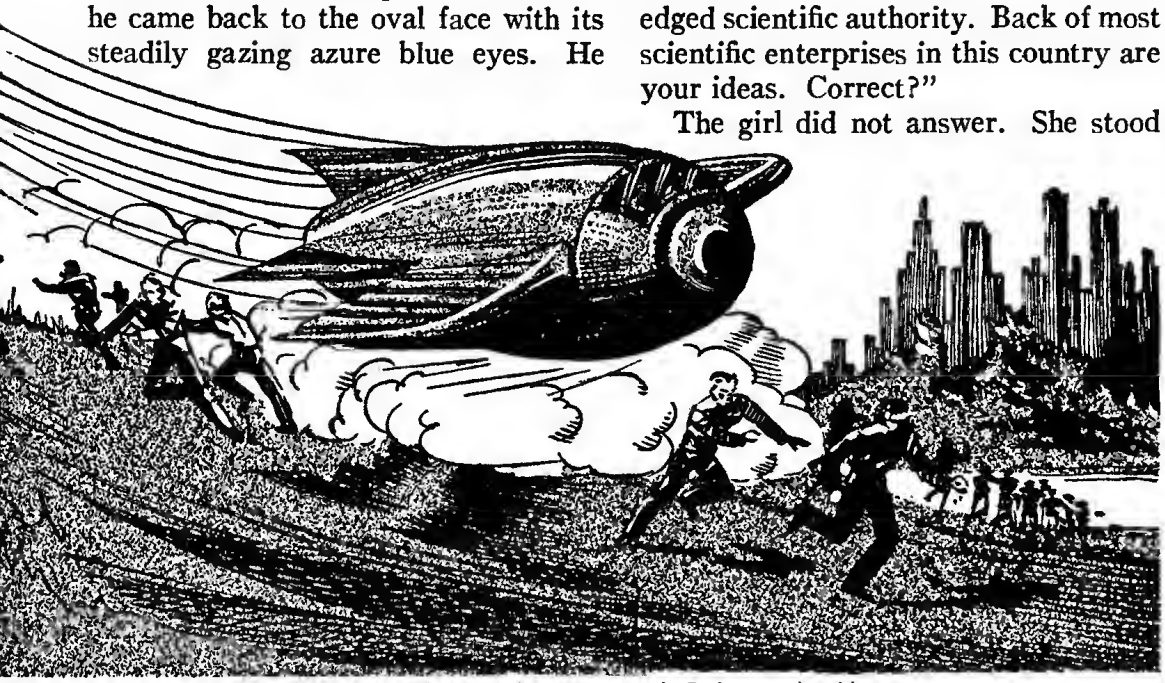
In the Judgment Hall, presided over by Abel Dodd himself, the girl revealed no trace of fear as she was ordered to step out from the ranks of the brilliant captives around her.

With majestic calmness she walked forward to the little railed dais, became the focus for the eyes of the grim faced, specially selected jurors, and particularly the glittering, snaky orbs of Dodd.

For a long time he studied her in silence, allowed his gaze to encompass her from the fluffed golden hair round her shapely head to her trim little feet. He eyed her blue silk dress, rent and torn with the rough handling she had received, brooded on the white flesh that peeped through the gaps. Then at last he came back to the oval face with its steadily gazing azure blue eyes. He frowned a little at the tiny glow of contempt he saw therein, the twisted, cynical smile on her finely molded lips.

"Janice Milford," he said slowly, his thin, cruel lips hardly moving as he spoke, "you are, we understand, an inventress? A scientist? You have been cited as America's foremost woman thinker. In three years you have forced yourself from obscurity to acknowledged scientific authority. Back of most scientific enterprises in this country are your ideas. Correct?"

The girl did not answer. She stood



The ship zoomed down, and frantic crowds fled its rocket blasts

perfectly still, her small white hands on the bar of the dais.

Dodd scowled, resumed with menacing slowness.

"Some little time ago you stated that you had the secret of atomic force—even space travel. Also you have ideas about the cosmos which are far beyond normal science. You are a mathematician and physicist. . . . Janice Milford, we demand every one of your secrets and order that you shall work entirely for our benefit. Is that clear?"

The girl slowly shrugged, asked in a soft voice.

"And if I refuse?"

Dodd's lips twisted into a sensual smile. "If you refuse, you will be forced through physical suffering to give up your secrets. Either way we shall win: it lies in your hands whether you choose the easiest or the hardest way."

"I see." The girl's faintly cynical smile broadened a little. "This seems to be as good a time as any to speak my mind. I tell you right now—tell all of you murderers sitting around me—that not one of my secrets shall pass into your possession. Do what you will with me, torture me until death if you wish. . . . But I will never speak!"

There was a little gasp of amazement from the assembly. Abel Dodd stared blankly for a moment: this was unheard of! A mere slip of a girl defying his edict.

"Do you realize," he breathed viciously, "that it is in my power to—"

"I know all you can do," the girl interrupted coldly. "I think it would be better if you stopped wasting time!"

She was sublimely calm and unmoved, so much so that Dodd felt irritated. A woman of acknowledged genius locking her secrets up so securely was more than he could tolerate.

"Later, p e r h a p s, you will have learned sense!" he barked, making a motion to the guards. "Take her away, and when she is more tractable notify me . . . . I'll break you down, Janice Milford, if it's the last thing I ever do!"

He watched her half dragged, half carried from the hall to an ominous black door on the right, then he turned to survey the remaining victims of his merciless inquiry.

THE closing months of 1959 were destined to be written down in American history like a catalogue of horrors, as a period when for the time being the progress and peace of the United States was interrupted by civil war.

Nobody quite knew how it happened: it just *did* happen. A sudden determined march, and back of it all as champion of the oppressed and bearing the torch of liberty loomed one Frederick Marden. He precipitated the revolution which only had its equal in the fargone dark days of Russia's remaking.

Unquestionably Frederick Marden believed in his cause, was out for justice. He could not be altogether responsible for the lawless hordes who operated under his banner, who defeated police and army alike in their savage uprising against civilization itself.

In October, 1959, the trouble started, until by the end of November, through violence and open murder, the Frederick Marden party had established itself in control of the entire country, had so far avoided open civil war by very reason of overwhelming numbers. But the civil war menace was by no means over. Somewhere in America there still remained the Graham Doone, implacably determined to rout Frederick Marden no matter what the cost. Until Doone was found Marden could not possibly rest content.

By December, 1959, the threat of Graham Doone was less tangible. Marden was in power, was to all intents and purposes the new President of the United States. But unhappily Marden was not alone. His Minister for Control, Abel Dodd, was a flint hearted and merciless scoundrel. He it was who instituted a reign of terror over America that would have done credit—had all the true facts been revealed to the world—to the Spanish Inquisition.

Abel Dodd terrorized men and women alike. Other countries, gathering drifting details, were up in arms over Dodd's methods, but because interference might mean war they stood aloof, and America went on suffering. But somewhere, still unfound, Graham Doone awaited his opportunity to strike. . . .

One by one, former celebrated master minds, men and women, began to disappear, their wealth and knowledge going to swell the Marden party's resources. The cleverest brains in the land were forced under torture or pain of death to supply their services to the new regime. Inventors were compelled to give up their every secret in order that the regime might gain sufficient scientific knowledge to one day make an attempt to master the world itself. . . .

WHEN his work was at last finished he lost no time in visiting the basement below the hall, paused as he entered the grim looking place replete with the heinous machinery by which he usually forced prisoners to obey his will.

In bitter silence he glowered down on the half stripped, silent figure of Janice Milford, lying against the wall on a pile of straw. Savagely he seized her arm, swung her over, stared down into her bruised, blood streaked face. Her blue eyes looked back at him in dumb contempt. He noted her blackened nails where hot iron had seared them away, the torn flesh beneath her arms where pincers had done their deadly work.

"Well, will you speak?" he demanded at last, standing over her. "Or would you like more?"

"Kill me if you wish," she replied quietly. "I'll never speak . . ." Then she turned over again and lay silent.

Dodd's brutal jaw set squarely. He swung around savagely on the half stripped guards by the doorway.

"Why the hell didn't you make her speak?" he snarled.

One of the men shrugged. "Guess I never saw a dame so tough, chief. We tried most things—and slowly too. All she did was to smile, until we beat up her face a little—"

"Get her secrets or suffer the same medicine!" Dodd snapped. "That's final! One thing only have you got to remember. Not one vital faculty must be destroyed: she'll be needed later. Advise me how you go on. . . ."

He glared round, then went back up the steps into the main hall, turned sharply as the head office visiphone came into being on the wall. The square, rugged face of Frederick Marden appeared on the screen.

"Come up to the office, Dodd!" he snapped. "Immediately!"

Dodd nodded insolently, walked up the great staircase from the hall and entered his superior's great office. Marden eyed him with steady gray eyes across his desk.

"It might interest you to know, Dodd, that while you have been so busy hunting down inventors and scientists, Graham Doone has been busy," he said slowly. "Yes, you can stare! If you'd taken the trouble to direct your attention to vital matters it would never have happened. As it is, Doone has succeeded in commandeering an entire army unit in Chicago, complete with

airplanes and munitions. Obviously that is where he has been hiding out all this time. What is more, thousands are rallying to his banner."

"WELL?" Dodd asked sourly. "Doone doesn't scare me none. We can thrash him and his whole army—"

"We *may* do so!" Marden broke in bitterly. "If I know anything of Doone he will not stop until one or other party is extinct. It's too late now to stop him. That was your job, only you were too busy torturing men and women."

"As far as Janice Milford is concerned, it's necessary!" Dodd retorted hotly. "You know as well as I do that she has marvelous inventions, and—"

"I know it, and if you'd have had intelligence instead of brute emotions you'd have won her cooperation by a proper outline of the cause we stand for. Instead you use barbaric cruelty that goes right back to the medieval." Marden got to his feet, his face set in relentless lines. "Dodd," he said slowly, "your brutality has got to stop! We're working for justice, not power through inhuman cruelty . . . Through that very reason, your panderings to it, we stand now with a civil war on our hands. Beyond any doubt Graham Doone means to strike at us—and hard!"

"Well, what do you want me to do?" Dodd's face was sullen after the upbraiding he had received.

"Marshal all your forces and man power immediately. Drop everything except military preparations. Release all prisoners and use them to swell your man power."

"What! Even Janice Milford!" Dodd's face was a study.

"Even Janice Milford," Marden nodded coldly. "She'll be useful somewhere. We'll return to the matter of her secrets when the war's over."

"But, damn it all—"

"Get going!" Marden snapped, and watched in grim silence as Dodd went slowly from the office.

CHAPTER II

Civil War

ON January 3, 1960, a week after the general mobilization call had gone forth from Marden, Graham Doone marched to the attack. He was commander-in-chief of his own army, an army made up of men and women of whom only a minority of the former were professional soldiers. The rest was made up of business men, even women, now more hard bitten than any old campaigner.

Unquestionably, Graham Doone's personality had had a lot to do with his present uprising. Successfully hiding himself from Marden and Dodd, he had gathered together an army of pretty formidable proportions which had taken over vast quantities of fighting material from the new regime, even though it had demanded a small war in itself to accomplish it.

Abel Dodd, so intent had he been on gratifying his own vicious desires, had not the time to marshal together his own army. He had labored under the idea that he was impregnable. He got the shock of his life when Graham Doone's first onslaught by bombing airplanes and guns caught him utterly unprepared.

Determined to defend what he believed was the only right form of Government until the end, Marden himself went on with the organizing, became commander of his hastily gathered armies and launched a counter attack.

By January 12 America was in the throes of a desperate civil war, the battleground covering the entire area from New York to Los Angeles, the air thick with hurtling planes as brother man hurled himself against brother man, as demoniac forces blasted innocent thousands to destruction, thousands who only knew the whole business had started because two factions could not somehow agree. True, that was the basic cause, but in the fashion of all wars the upheaval rapidly degenerated into filthy slaughter and destruction in which the vast majority lost all idea of what they were fighting for. Only Marden and Doone, on opposite sides of the fence, knew that—and each was determined to win.

Marden had the hardest task. For one thing, Abel Dodd was dead with a bullet through his brain: that deprived Marden of a good field expert, one that he had not the time to replace if even he could have found the right man. Doone for his part was well supplied with experts, master minds of business whose job it was to organize and plan—and, in wartime with devastating results on the enemy.

THEN toward the close of January something peculiar happened.

A whole day's hand to hand fighting in the civil war failed to produce a single casualty on either side! People who had been trapped in fires had walked out unburned: those directly fired at with rifles had not been scratched.

Nor was the astounding happening limited to unhappy America: the whole world reported the mystery over the radio. Only in cases where absolute smashing of a body had occurred had death resulted. Otherwise, thousands of everyday accidents the world over had failed to produce any deaths or serious injuries.

When Marden received the news he did not know what to think. For his own part he felt no different; a little tired perhaps, but that was not to be wondered at. And yet, there *was* a subtle difference, now he came to ponder it. Alone in his great office, pondering over the vast map from which he was planning his attack, he took a few seconds from harrassing details to study himself. His gaze dropped to his hands. They were changed in some way—the skin was thicker and darker than it had been—coarser.

Frowning, he got to his feet and pressed the light switch, flooded the room with a brilliance that paled the single desk light. He went to the mirror and stared at the grim face reflected to him. Undoubtedly there *was* a change! For several weeks he had hardly been outside—even when he had only met the icy cold of the New York winter. Yet now he was as brown as though he had been exposed to free ultra violet radiation. Again there were the evidences of coarsened skin. Puzzled, he rubbed his cheeks. They were curiously sensationless.

He shrugged, felt unable to cope with the intricacies of his condition. More important matters demanded his attention. Baffled, he went back to the map, switched on the visiphone and issued further instructions to the field of action.

But little by little both he and Doone began to realize they were up against an inexplicable problem. For unless they scored direct hits at human beings —and that with high explosive—their efforts were useless. Bullets made no effect whatever. For some unknown reason all human beings were getting incredibly tough and resistant to attack. Everywhere it was the same.

Death roll from the civil war

dropped amazingly: armies fought against armies with little result beyond waste of time and money. Neither side accomplished anything. War was suddenly and mysteriously stalemated. There was nothing for it but to declare a truce, so for the first time, on the evening of February 2, Marden and Doone met face to face in the former's office.

IN silence, both surrounded by their respective experts, the two men faced each other. Marden stood stiffly at his desk, his ruggedly chiseled face turned into a mask of shadows by the desk lamp. Appraising him stood Doone, thirty-two years old, dark headed, even handsome, carrying his powerful frame with all the erectness of still youthful purpose. His black eyes, the deep set eager eyes of a dreamer and doer, stared coldly back across the desk.

"Marden," he said quietly, "it's time to end this carnage. Time we reasoned the thing out like sane men. I'd have done so long ago only you—"

"I have always been open to negotiation," Marden answered curtly. "Isn't it rather strange that you arrive at this time with the idea of a truce, when the real reason is that war is becoming impossible for both of us? How can there be war when human beings are becoming invulnerable. That's the real reason, isn't it?"

Doone hesitated briefly, then nodded his dark head.

"Yes, I guess it is. The only thing we can do now is cooperate—even as we should have done in the first place. We must begin again on a new footing. You and I must work together for the common good, pool our respective ideals."

"Possibly that can be arranged," Marden conceded, thinking. "And I want you to understand right now that I never agreed with this civil war. I intended to cooperate in the very manner you have now suggested—but power was not altogether in my hands. Abel Dodd, for instance. He did untold harm to the cause. When you justifiably fought back, the only thing to do was to hold my ideals above all else and retaliate. You understand?"

Doone slowly nodded. "I think I do—and I believe we can get together. In any event hostilities must cease forthwith and an immediate investigation of this strange deathlessness must be instituted . . ." He paused, looked at Marden long and earnestly, then added, "Tomorrow the terms of the new deal will be officially drawn up. Then, if we can, we will try and write a better page in American history. . . ."

Marden's stiffness relaxed a little. He gave the slightest of acknowledging bows, watched in silence as Doone turned suddenly and departed with his advisers.

THE world breathed more freely with the end of the American Civil War. The danger of incidents and international complications were removed. Trade restarted: America turned to the task of rebuilding after the struggle. By degrees, Marden and Doone, working in collaboration, achieved a satisfactory basis of understanding. Even as early as the close of April, 1960, a definite balance of relations was being established.

And still the world faced its new problem—the still ever present mystery of deathlessness. Through the months following the close of the war the strange transformation of humanity had gone on—that slow, hardly perceptible thickening of the skin, a general toughening of all organs, a metamorphosis in the epidermis of men and women alike which had gradually given them the

power to defeat death itself, except in cases of violent accident.

Nor was that all. Newly born children possessed the same peculiarity! Disease and death in the ordinary sense had mysteriously evaporated from the world. Death only existed in circumstances where an entire body was destroyed. Injuries healed with incredible rapidity and minimum of blood loss. Births were unchanged in number, but the death rate dropped 75 per cent below normal.

Scientists the world over began to study the problem industriously, but beyond producing highly t e c h n i c a l treatises on skin thickening arrived at no convincing conclusion. Governments began to urge them to investigate more closely. The absence of normal death rate was beginning to have grave effects. Population was increasing by leaps and bounds all over the world.

Doone and Marden, co-Presidents of America, were faced with this same problem. Day by day the special census returns revealed the startling increase in humanity. There were dozens of births to only one death. Marden, at his wits' end to know how to tackle the mystery, suddenly remembered Janice Milford.

"I BELIEVE," he said thoughtfully, as he and Doone pondered the matter, "that she's the one person to get to the root of the mystery. Maybe you've heard of her?"

"Few people haven't," Doone answered quietly. "But I'm also remembering the brutal treatment she got by your former Minister of Control because she wouldn't give away secrets. What makes you think she'll help now?"

Marden shrugged. "I can only put the question to her. I think she realizes I had no part in her torture. In fact I had her immediately released on the outbreak of war, and during that time she did a great deal of good in the nursing line, invented the most amazing remedies for our fighters. However, no harm in seeing what she can do for us."

He switched on the visiphone, said briefly, "Send a fast car over to Miss Janice Milford's place and ask her to be good enough to come here immediately."

He switched off, turned to resume his study of the situation with Doone. Some twenty minutes passed, then they glanced significantly at each other as the clerk announced the girl. Janice Milford came in quietly, attired in a neat blue costume and bewitching hat.

"I believe you wanted me, gentlemen?" She looked from one to the other with her clear blue eyes.

"I sent for you, Miss Milford." Marden held out a chair for her, dismissed the clerk. "There are one or two matters afoot which I feel only you can understand," he added smoothly.

"Such as?" The girl's voice was by no means compromising; rather it was cold and unyielding. Clearly the memory of Abel Dodd and his cruelty had by no means departed.

"We believe," Marden said slowly, sitting down again and clasping his hands on the desk, "that you can solve the present world mystery of deathlessness where other scientists have failed."

THE girl was silent for a time, unaware of the unwavering gaze of admiration she was getting from Doone. From the instant she had entered the room he had never taken his eyes from her lovely face.

"You really mean that because all other scientists have failed to solve the mystery I'm about the last resort?" she asked dryly, her lip curling. "Very flattering, gentlemen. Last time, as I remember it, there was no such request.

I was ordered to assist you and because I refused I was tortured. Perhaps I hardly need to add that such brutality is not easily forgotten?" she finished bitterly.

"Of course not." Marden coughed a little. "But—but, Miss Milford, that was the work of Abel Dodd: you must realize that. I had you released. In these days you are back where you were—a much respected scientist. All we ask is your aid. Whatever you desire will be given in return for your services, be it honors, money— Whatever you wish! A crisis is rapidly approaching through this steady increase in population, and we have got to have a solution somehow. Please believe that I speak truth."

The girl's perfect face softened a little: she even smiled faintly. Curious, Doone reflected, how little changed she seemed compared to other people. There was on her skin no trace of the thickening effect so noticeable in others. He remarked too the perfection of her manicured nails, remembered they had once been charred. He frowned a little, felt a slow surge of hatred against Marden who was, at the root, the cause of that brutality.

And suddenly the girl's eyes were upon him, studying him silently. He smiled at her, rather uncertainly. That seemed to decide her. She turned suddenly back to Marden.

"Very well, I'll believe you," she said briefly. "I'll get to work and see what I can find out. Probably by tomorrow morning I will have arrived at some conclusion. One or other of you had better come round to my laboratory. It's so much easier to explain there, with all the instruments around me—"

"I'll come!" Doone interrupted eagerly, as Marden was about to offer. "About what time?"

"Oh . . ." She demurred. "About ten tomorrow morning. I'll be expecting you . . ."

"We cannot thank you enough, Miss Milford," Marden said, shaking her slim hand. "Rest assured that I have always admired your powers, and still do—that I had no part in that recent dreadful business. And now, whatever your fee may be for—"

"I rather think the fee can be arranged at the close," the girl broke in softly, smiling in an enigmatical fashion. "I have my own ways of working, you know, and probably I'll be amply repaid in the end . . . even without money." She paused, turned to the door. "Tomorrow at ten?"

"Without fail!" Doone eagerly held the door open for her, was rewarded by her quiet, feminine smile as she passed out into the corridor. Once he had closed the door he turned.

"There, Marden, is a woman!" he declared in admiration, dark eyes shining. "Brains, beauty, poise—"

"She's a scientist," Marden said curtly. "And we are working for the good of the people. Don't start mixing your ideals with other emotions or we'll soon find trouble. . . . Come and sit down, man; see if we can't figure this matter out."

Doone sat down, but for the rest of the day he was curiously listless. His mind was definitely not on his work. He simply could not get Janice Milford out of his thoughts. Every woman he had met or handled up to now had failed to make his heart alter its rhythm in the slightest, but now. . . .

Definitely Janice Milford was a woman!

CHAPTER III

The Mystery of Janice Milford

AT 10:00 next morning Doone presented himself in the huge research

laboratory attached to the girl's rebuilt New York home. The laboratory astounded him with its completeness, its air of clean activity, the men and women in spotless overalls moving to and fro amongst benches and machinery. In silence he looked along the rows of great windows, with their automatic steel shutters for producing artificial darkness when necessary, gazed round on the instruments catching the bright spring sunshine.

Then he turned with a little start as a soft voice fell on his ears.

"Good morning, Mr. Doone! Right on time, I see . . ."

The girl was behind him, the sunlight turning her golden hair to a halo. If anything, the white belted smock she was wearing served to enhance the soft curves of her figure, reflected an added light to the perfection of her features. Doone was aware as he eagerly greeted her that the cynical light in her blue eyes had disappeared. He read only friendliness as he shook her small but capable hand. He rather wished he was not a co-President with business ideals. A laboratory technician's post would have suited him much better.

"Well, did you find anything?" he asked quickly, trying to remember the dignity his position demanded.

"I think so," she nodded briefly, and turning led the way along the laboratory to yet another department, entirely empty of assistants but filled with a mass of highly polished, intricate machinery. Doone followed her into the place, glanced at her in puzzlement as she closed the door.

"I guess you've enough assistants and apparatus in here to run a high powered business," he commented. "Am I asking you to betray secrets if I ask what it's all for?"

"Not at all," she smiled back. "Science happens to be my business, that's all. It was my work before the war, and it is now. Back of almost all patent medicines, drugs, health tonics, new electrical gadgets, explosives, and so forth, you will find the name of Janice Milford. I am, I suppose, the head of a great supply factory. Most of the things are my original invention, perfected and manufactured by this trained staff of men and women chemists and scientific experts. Finally the ideas are marketed through the appropriate channels. That I suppose is the blessing of having a good brain," she finished enigmatically.

SHE turned aside suddenly, paused before a glass globe filled to the brim with a curious sticky fluid. Floating within it was a mass of tissuelike substance which made Doone stare in amazement.

"What on earth is it?" he gasped, somewhat horrified.

"Synthetic flesh," Janice replied calmly, eyeing it critically. "It is simple enough to manufacture. The hard part comes in when you try to infuse it with life. I haven't done that, of course, but as it lies there in the fluid it reacts—by very reason of the fluid—far more quickly than normal flesh to external stimuli. Look at it closely. See anything wrong with it? It was manufactured and put in the globe yesterday afternoon after my talk to you and Marden."

Doone studied it thoughtfully. "Looks kind of—of thick," he said at last. "The difference between this stuff and ordinary flesh is about the same as that between raw and cooked meat."

"Exactly. In other words, it is in a state of progressive anabolism. There is no normal breaking down of cells with consequent age and finally death. The same thing is happening to it as is happening to all living things in this

world. Anabolism alone is present, and the opposite state of cell breakdown—ketabolism—has disappeared entirely. What is the result? Skin thickens upon itself: there is no breakdown of cells. Little by little flesh and blood beings—in fact all living things—are becoming invulnerable in a shell of hardness through which not even a bullet can pierce. Hence no ordinary accidents can cause injury: only direct hits to a vital center, and that with great force. Even normal death rate is down because death is normally the outcome of ketabolism in its final stages. Is that clear?"

"Clear enough," Doone nodded. "But the reason is not!"

"The reason," the girl said slowly, "is almost incredible. I can give it in a few words—cosmic rays have ceased!"

"But how can—"

"So far," the girl went on steadily, "scientists have concerned themselves with studying the mystery by examining human beings. They have neglected to look at outside sources. I have examined the problem from the interstellar angle, have found that Wilson cloud chambers reveal no sign of cosmic rays emanating from outer space. Normally, as you know, the cosmic rays produce a shower of electrons and positrons when stopped by matter. The Wilson chamber traces these showers individually and the energies of production can be measured. . . . But now there is absolutely nothing. That in itself explains the mystery of the sudden deathlessness sweeping the earth."

Doone looked puzzled. "Just how?" he asked, thinking.

"Well, it is generally known that cosmic radiation falls on earth in considerable quantities from a source in space unknown. Consider its powers of destruction! Every second it breaks up twenty atoms in every cubic inch of atmosphere, millions of atoms in each of our bodies. It is also admitted that this radiation, falling on germplasm, may produce the spasmodic biological variations which determine evolution. . . . In other words, instead of the gradual breakdown of our bodies under cosmic waves, the breakdown has ceased. Complete anabolism reigns instead and, so to speak, time and evolution have halted insofar that we are not actually ageing while no disintegration of our bodies is occurring."

DOONE was silent for a long time after the girl had finished, then he asked slowly,

"But *why* has this happened? What could produce such an effect?"

The girl shook her head. "That goes beyond me, Mr. Doone. I only know the effects, not the cause. . . . "

She turned aside, meditating, went over to the bench. Doone joined her, waited for her to speak.

"I realize one thing very clearly," she said slowly, "and that is the terrible danger which threatens through the absence of natural death. Take even a small instance—say, oysters or sea urchins. They produce millions of eggs annually. If all those eggs are destined to reach maturity our seas will be clogged from end to end within a year! Everything that lives is doomed to increase at top speed! Plants, trees, even lowly bacteria, human beings. . . . If this condition continues for even six months the earth will be crammed with living things of varied sorts from end to end. In a year there will not be room for everything. Seas overloaded, lands crammed tight. . . . "

"High explosives can still destroy," Doone reminded her.

"True—on animals, bacteria and plants. But what of human beings? After all, every one of them has a right

to live. That we shall stoop to wholesale massacre is unthinkable."

"Then what *can* we do?" he demanded helplessly. "We have only earth to move about in—nothing more."

"We have outer space — other worlds."

Doone laughed shortly. "Forgive me, Miss Milford, but isn't that rather a wild dream? Space travel isn't practical. You may remember Brandon Hurst's mighty effort to reach the moon about four years ago? He failed utterly—was lost in space."

The girl slowly nodded. "Yes, I remember him. He invented the first supposedly practical rocket ship and aimed for the moon, taking his wife and daughter with him. That's right, isn't it?"

"Yes—but he never landed on the moon: that's the point I'm trying to make. The failure of his invention proves space travel to be impracticable."

"Yes. . . . " Janice reflected for a while, said presently, "I had a great admiration for Brandon Hurst. He was a scientist in a million. At that time, unfortunately, I was not sufficiently well known to be connected with him, otherwise I'd have offered to go with him—"

SHE broke off, made a little gesture. "I'm afraid this isn't getting us anywhere, Mr. Doone! The problem we have to solve is a method of space travel far more effective than that of Brandon Hurst. Unless this cosmic ray blockade breaks down very quickly we will be overwhelmed by a rampage of growth. Space travel is the only way out. . . . "

"As co-President," Doone said slowly, "I could of course give orders that all marriage must cease. If not marriage, then at least children. Birth must stop until matters equalize."

"Your orders will only apply to America," the girl remarked. "Other countries may not agree with the idea, despite its logic. Even if it did become a world order it still would not stop human nature having its fling. Children will go on being born in spite of whatever orders there are. . . . No, Mr. Doone, exodus from earth to other worlds is the only course open at the moment."

"Another thing!" Doone exclaimed suddenly. "If this cosmic ray failure is universal, or at any rate limited to our particular system, the trouble will be the same on any world plants, that life of any sort on other planets, that life too must be deathless and multiplying, even as it is here."

Janice shrugged. "With the possible exception of Mars and Venus, I am quite convinced that all the other worlds are totally dead," she said quietly. "No life has ever been on their surfaces, probably there never will be—unless we put it there. The cosmic ray failure will make no difference to them. If we can conquer space we will move some thousands of Earthlings to the world of our choice—a world where there is at present no life—and once we have established them there your system of controlling birth from the very beginning can be brought into effect.

"You will have a new and fixed community to control—new laws. That will be very different to interpolating new laws into the present order of things. That law will stand until cosmic rays return—if they ever do. We must thin out the people of Earth—divide the population over two or more worlds if possible, then take the necessary steps to prevent birth and destroy all other growing things as fast as they appear. A ceaseless war against nature, and a truce can only come when cosmic rays return."

DOONE nodded slowly and smiled. "You've got the right idea all right. You even talk as though the secret of perfect space travel is just around the corner. I wish I could believe that."

"Perhaps you can. . . . " She smiled at him mysteriously. "I may be wrong, of course, but I think if Brandon Hurst could manage what he did—badly though he finished up—I can do likewise. Without egotism, my knowledge of science equals his."

"I'm the first to admit it. . . . " Doone fell silent, looking at the girl's lovely face, then presently his gaze dropped to her slender white hand resting on the bench. His brows knitted a little. "Odd, isn't it," he murmured, "that with everybody else turning brown and thick-skinned you retain a smooth, satiny perfection of appearance? It's puzzled me a lot."

She sliced vigorously with a sharp knife

"Has it?" She seemed almost amused. "Well, of course, the brownness and thickening of skin is caused by cellular increase. Skin is somewhat reflective of light: a deeper epidermis produces less light reflection and a consequent dull brownness akin to that produced by ultraviolet. As to me. . . . Well, I'm the inventor of all manner of drugs and medicines, as you know. One particular formula keeps my skin as I like it to be. Just the same, I'm as tough as anybody else. See. . . . "

She reached forward and took a sharp, glittering knife from its rack. Calmly she sliced the vicious blade across her extended white palm. Doone winced involuntarily, expected a welling up of blood, so fragile and dainty did that palm appear. But nothing happened. Not even a mark. He took the knife and ran the blade across his own hand, but as he had expected its toughened state prevented any injury. But the difference between his hand and the girl's was about the same as between leather and tissue paper. He looked up suddenly to meet the calm scrutiny of her blue eyes.

"I guess you're a good deal tougher than you look," he murmured, handing the knife back.

"Yes. . . . " She nodded slowly, added bitterly, "So Abel Dodd found out when he had me tortured—"

She stopped suddenly, surprisingly so, switched the subject with an obvious haste.

"I think the only thing to do is to try and locate Brandon Hurst's plans for his original space ship," she said rapidly. "Then I'll try and improve on them. That's where you come in. Use your authority to make it possible for all data on Hurst's work to be submitted to me without delay. There will be records of his work with the patent offices,

I expect. Secondly, I want all first class astronomers to make a detailed study of the planets. I will do likewise and see how far my observations check with theirs. That can be done?"

"Immediately," Doone promised, and turned to go. Then with a hesitant movement he turned back again, shook the girl's hand gently. "I—er—I've enjoyed every minute of this," he murmured. "It's such a pity we're faced with such world wide issues, otherwise perhaps. . . ." He broke off, shrugged. "Forget it! I'll notify you the moment I get results."

He released her hand, turned to the door. But as he left the laboratory he was haunted by a curious remembrance—something the girl had said that somehow did not fit into the general scheme of things, a statement at variance with truth. What it was he could not for the life of him recall.

Only one fact remained predominant before him. For all the curious air that hung about Janice Milford she was not *a* woman, but absolutely *the* woman.

CHAPTER IV

Nature Gone Mad

DOONE lost no time in putting the girl's demands into effect. The patent offices were immediately toothcombed, all newspaper files and scientific journals containing the vaguest hints of Brandon Hurst's space ship, together with color photographs of the inventor, his wife, and daughter were gradually produced, to be immediately rushed to the girl.

A week passed and she made no observations—a week in which the trouble in the deathless world grew to alarming proportions. The oceans, even as the girl had predicted, were already becoming difficult to navigate. Algae, seaweed, together with multimillions of small sea creatures, were multiplying with such terrific rapidity that they got entangled in ships' screws, impeded the passage of passenger and commercial sea traffic. Prices for foodstuffs began to soar through the very difficulty in obtaining them—and when it arrived half of it was rotten through the festering increase of bacterial basis.

In the air a tremendous increase in bird life began to harass pilots: the skies were thick with flying life of all types. . . And down on the earth vegetation crawled along at a steady, inevitable pace, snaking its way so rapidly into buildings that armies of men, specially employed for the job, found it traveled far quicker than knives and burnings could destroy it. Parks overflowed with bursting masses of green, aided by the summer heat. Grass sprang up through solid roads. Windows smashed under inquisitive tendrils. Utterly bewildered, mankind found himself blundering around in a world where Nature had utterly gone mad.

DOONE was thankful when at last Janice visiphoned him to come over to her laboratory. He found her as cool and collected as ever, with still that hint of mystery about her steady eyes.

"Well, found anything?" he questioned eagerly, the moment he was shown into her presence. "Matters are getting to a pretty desperate pitch even in this short time. . . . Still, I've held off issuing any special orders until I had your observations."

"Just as well, perhaps," she smiled. "I've got the reports of the various astronomers, together with their spectroscopic and other tests of the planets, density, atmospheric records, and so on—a pretty complete mass of data which

checks exactly with my own notes. . . . But more of that later. What chiefly concerns us right now is that I believe I can improve on Brandon Hurst's space traveling formula far enough to produce foolproof effects."

"You can!" Doone gazed at her in wonderment. "Say, where do you get your knowledge from?" he breathed.

"I guess that doesn't really matter, does it? Now, see here."

Moving to the bench she pointed to the blueprints lying flattened upon it—faultlessly drawn blueprints exact to the last detail. In silence Doone listened to her as her long index finger traced across the prints to explain her meaning.

"These plans are my own, based on the original idea of Brandon Hurst's plans at the patent office. He used a rather clumsy system of rocket control which demanded a large generating plant and a great amount of space for fueling chambers. That maybe is why he failed in his attempts. . . . I shall use a similar method, but with a far greater degree of certainty. I shall use atomic power."

"The secret Abel Dodd tried to extract from you?"

"The very same. You see, a beam of power derived from smashing atoms generates a terrific recoil kick. For instance, you know how even an ordinary cannon hurls itself backward after each shot? Yet an ordinary gun is just a peashooter compared to atomic force blast. The recoil is correspondingly higher. Therefore, by firing atomic force blasts instead of ordinary rocket explosive I believe I can drive a vessel across space with tremendous speed, great safety, and surprisingly low fuel consumption. A cube of steel three inches square will be quite sufficient to drive a good sized vessel to Pluto and back again. Remember that once the actual gravitational fields of the planets are overcome it is all plain coasting. Between planets one can achieve perpetual motion: ether of course offers no resistance—or if there is any it is quite immeasurable."

"And you are really sure you can manage it?"

"Quite sure. Reports from independent engineers prove the idea to be sound. The only thing I have not divulged is the method of obtaining atomic force—nor do I intend to. There are too many power-lusting fools in the world to turn that secret loose. The fact remains, I can do it by a system of gradually built up pressures and heat inside a small matrix. . . . What I shall need, Mr. Doone, is a Government grant of unlimited finance to construct one hundred large sized space machines immediately. I'm leaving it to you and Marden to conscript factories for the purpose. I'll supply the plans and nominate the engineers."

"With matters so urgent there won't be any opposition," Doone replied quickly.

"If there is, crush it," the girl said, her lips tightening for a moment. "We can't afford to have slip ups at this time. I underestimated the ravages created by stopped cosmic rays. And now to these other observations."

SHE picked up a wad of notes fastened with a wire clip.

"Does it surprise you to know," she asked slowly, "that the best possible planet for migration is Saturn?"

"Saturn!" Doone echoed, staring. "I'll say it surprises me! The vast distance for one thing—it's uncertain surface for another. I should have thought Venus—"

The blonde head shook firmly. "No, not Venus. It has both internal warmth and great nearness to the sun. The

heat would overcome earth beings with great rapidity. Besides, according to the new 400-inch reflector at Mount Wilson it's surface is probably 75 per cent liquid mud, with hot oceans. Utterly useless—But in Saturn, strange to say, we have a unique planet. For one thing its huge size will make for plenty of room: for another, exhaustive tests reveal that some 50 per cent of its surface is passably solid, and 50 per cent of a planet 75,000 miles in diameter is a good deal. Other details are that the atmosphere, originally believed to contain hydrogen and nitrogen only also contains a considerable amount of oxygen, enough for earth beings anyway. Sunlight, though only one hundredth of Earth's, is still sufficiently strong enough to produce a fair degree of light, together with very necessary ultra violet radiation. The day lasts about ten hours, roughly half an earthly one, and the night will be well illumined by the rings and ten moons. Even gravity will be no handicap because Saturn's density is two-thirds that of water and surface gravitation is therefore about one-fifth greater than earth's. Any human being, any object, will therefore only gain one pound in five. . . . Again, unlike Jupiter, Saturn is warm. His distance from the sun is counterbalanced by considerable internal heat which should give a general average of around 60 to 80 degrees Fahrenheit. . . ."

"I see," Doone said thoughtfully. "I don't pretend to know how you can be so certain, but if the reports all check I suppose it's O.K."

"Quite," the girl said decisively. "The only difficulty as I see it will be in navigating through the asteroidial belt and Saturn's rings. However, I think that can be mathematically worked out ahead for the pilots to understand."

"Suppose," Doone mused, "nobody agrees to the idea of being hurled to another world? What then?"

"I rather think that plenty will agree. You cannot order them to go, of course. Call for volunteers. There are quite enough venturesome spirits in every walk of life to answer the call. It doesn't worry me."

"Well, we can but try. Now, if I put the factory conscription order into force immediately how long will it take you to produce the hundred machines?"

JANICE considered for a moment, finally answered, "Working night and day in relief shifts the first batch of twenty-five machines can be produced in a month. I'll see to that. Each ship will hold about thirty people, including crew. A first class scientist will go with each vessel so that all details as regards landing and so forth can be attended to. Engineers will be given plans for the erection of temporary cities until proper cities can be erected. Later, of course, when the migration is over, you will go and take control, put your ideas into effect."

Doone nodded slowly. "And you?"

"I shall be one of the last. I shall have to remain to the end to supervise the ships."

They both became silent for a moment, regarding each other. Then Doone spoke again, quietly.

"You're a most amazing woman, Miss Milford. You know, with my control of men and your bewildering scientific knowledge we could—"

"You'll arrange everything, then?" she broke in, almost curtly. "I'll keep you in touch with my part of the business."

The plain dismissal made Doone smile wryly. Quietly he shook hands, went out with the vision of that perfect face and its blue eyes hovering before him.

CHAPTER V

Suspicion

THE general conscription order of men and materials was by no means welcomed—but it had to be obeyed. Fortunately, the obvious evidences of distress stalking the world forced most men and women to the realization that Doone and Marden were doing what they considered was the best for them.

By radio they were gradually informed as to what was intended: people were given a free choice as to whether they chose to start a new life on another world or stay behind and die, paradoxically enough, because of life. Scientists then added to the propaganda by their own descriptions of Saturn's possibilities.

The idea caught the public fancy. Several times the girl herself spoke over the radio, was televized to the remote corners of the world. Other countries, desperately pushed for some means to relieve the rapidly growing population and perpetual increase of all living things, begged for her services, which she freely gave. She deputized international scientific experts to carry out her instructions, telling them every needful detail except certain vital secrets which she still kept to herself.

In the weeks of flurry and bustle during which mankind turned to the task of space ship building—for the inclusion of other countries entirely altered the girl's original 100 machines plan—it became gradually obvious that nobody seemed of such importance in the world as Janice Milford. Already a great scientist, she became elevated to almost demigodic proportions as a great savior in time of distress. The people were willing to obey her every suggestion. Her quiet charm of manner, her beauty, the intangible air of mystery that hung around her, swayed the minds of both men and women.

THE whole world listened to her address a month later when, right on time, the first twenty-five space machines were ready to depart from New York into the void. She gave a speech on the possibilities of Saturn, reaffirmed her faith in the engineers who had been trained to control the vessels in their flight. Though Marden and Doone were beside her on the speaker's platform at the departure grounds they seemed to have little significance in the proceedings. They sat on either side of her, backed by famous public officials, and watched her speaking into the microphone, faced by thousands of interested people and the already sealed space machines containing the first batch of 750 volunteers.

Doone's gaze toward the girl's slim back was one of complete admiration as she went on talking—but not so Marden's. His brows were down, his cold gray eyes narrowed with impatience. This complete usurping of his authority, over the United States at least, anything but pleased him. Never in his whole life had he believed that a woman should take prior place over a man; it enraged his naturally arrogant spirit. Obviously he could take no action now, so he sat and glowered, drummed impatiently on his chair arms.

At last the girl finished, raised her arm over her head in a signal. A blasting roar boomed from the assembled twenty-five ovoids with their glittering windows. One by one they rose with the smooth ease of a bird, swept with effortless acceleration toward the clouded morning sky. One by one, guided by the perfectly trained pilots.

They were lost in the clouds. The last machine vanished from sight amidst the echoing shouts of the peo-

ple—Seven hundred and fifty men and women, first pioneers of the earth, had gone out into the unknown. A solemn little hush fell on the crowd. The thing was over. There was a general movement toward departure.

Janice turned, smiled at the men on the platform, then with a little nod of farewell she descended to the grass and headed toward her waiting car, accompanied by the cheers of the milling throngs. Marden's eyes followed her suspiciously, until at last he saw her car begin to move away through the press.

"I DON'T like it!" he growled. "That woman is doing just what the devil she likes! I sometimes think we should have investigated her past history more closely before putting everything so completely in her hands."

"What on earth for?" Doone demanded, staring in amazement. "Hasn't she provided the only possible way out of our difficulties?"

"I suppose so. . . ." Marden made the admission grudgingly. Turning suddenly he faced Doone squarely. "Frankly, Doone, I'm beginning to distrust her!" he snapped. "She's definitely a scientific freak, and I don't like the way she's lifted power right out of our hands and captured the public imagination. Has it ever occurred to you how magically she derived an atomic force system of space driving from Brandon Hurst's anything but lucid plans? I know far more of engineering than you, Doone, and I can't even begin to fathom how the devil she did it! And successfully too!" He stared up at the cloudy, empty sky.

Doone gestured impatiently. "Distrust her all you like, Marden, but I admire her intensely. I'm prepared to do all she says—anytime and anywhere. I can understand the people feeling likewise. Dammit, man, haven't you got any responsive feelings at all inside that armor of yours?"

"In love with her?" Marden's rugged face was cynical.

"Supposing I am? What difference does it make?"

"Plenty! It might blind you to her real motives. I've more than a hunch that there's something unnatural behind all this. The deathlessness, her extraordinary ingenuity in finding a way out of the difficulty, her choice of Saturn above all other planets and her ability to persuade other astronomers that her ideas were right."

"Observations checked exactly!" Doone retorted hotly.

"I know. She worked very logically, convinced them of everything. They stated facts and she built up on them. . . . *But why Saturn?*"

"Because it's the best planet! Don't start making a fool of yourself, Marden!"

Marden smiled rather twistedly. "I'm going to make it my business from now on to find out all I can about this young lady," he stated calmly. "If she's all she claims to be, all right. But if she isn't. . . ."

He turned away, his lips compressed, descended from the platform. Doone stared angrily after him. Not for a single instant would he have openly admitted he felt the same way. Janice Milford *was* extraordinary, and none but a fool could deny it. If indeed she did have an ulterior motive in all this, it was well hidden. So far she had apparently acted only for the good of all concerned.

FOLLOWING the departure of the first twenty-five space ships there was an exodus of machines every week, not only from America but from other countries, all of them taking the long

trail into infinity. Before very long the first space machines would return for a second load, together with the first full story of conditions in space and on the ringed planet.

In the interval, in a determined endeavor to make things more habitable on earth, international agreements were drawn up for concerted bombing raids on vegetation infested areas, the destruction of enormous carpets of choking weed smothering the bosoms of the seas. United mankind started on a war against Nature, knowing that upon his activities rested the only hope of maintaining Earth as a habitable planet. Unless the cosmic rays returned. . . .

Weeks passed—weeks of incessant work on the part of every man and woman, with occasional encouraging radio talks by Janice Milford. The ships would soon return, she said; and finally the time limit had elapsed for the round trip. Mankind waited eagerly for the first sign of the returning vessels. Every telescope was at the ready. The girl herself even predicted the approximate hour at which they would appear. But they failed to arrive!

Anxious hours passed into days and no space machines put in an appearance. For the first time production on further space vessels was halted. Something had gone wrong somewhere. If space too only offered death—as was beginning to seem probable—there was no sense in making an effort to die. Inevitably that would happen on Earth in the long run. Death because of the cramping spread of perpetual life.

FREDERICK MARDEN was coldly malignant about the new situation. In the past weeks he had kept to his promise and had had the girl's entire life and history investigated—nor did the results cheer Doone very much when he heard them.

"I tell you, Doone, this girl is playing a dangerous game, with human lives as pawns," Marden breathed, pacing the huge office. "Janice Milford, eh? Would it interest you to know, my lovelorn friend, that nowhere in all the birth records of the United States is there a record of her birth? Much less so in West Virginia, where she claims she was born. There *are* many Janice Milfords, of course—but none that apply to her. Nor is there a record of family tree or possible ancestors.

"In fact, from every investigation I've made she only made herself really apparent about three years ago—two years or so before the civil war began. From that point onward there are records of her having bought great quantities of scientific machinery from various firms, and of the gradual build up of Milford Industries Incorporated. That, I presume, is the normal business which she controls."

Doone swung moodily to and fro in the swing chair. "I can't understand it," he muttered, brooding.

"No?" Marden came to a stop, rested with his knuckles on the desk and stared at Doone deliberately. "Well, I do!" he said bitterly. "Some five thousand people of different countries have been fired into space—and God alone knows where they've gone or what's happened to them! Think, man, of the incredible way in which everything coincided! First the world went deathless and provided a perfectly sane reason for sending people from earth. Mysteriously enough, this girl had just the right ideas! She tells a cock and bull story about the first space machines returning—but they don't! What's the answer to that one?"

"Summon her here and find out."

"I've already spoken to her over the visiphone but she seems entirely unmoved by the occurrence. All she's done

is to put a stop order on space machines until the first ones come back. If they don't come back I suppose we're expected to calmly accept the whole thing as a failure! But not with me, Doone! I've got the people's interests at heart and this woman isn't going to get away with it! It's—it's mass murder! Deliberately she has hurled five thousand men, women and children into space in those insane space machines of hers—just the same as Brandon Hurst threw himself, his wife and daughter away!"

"But maybe it really *is* misfortune!" Doone insisted quickly.

"Misfortune!" Marden smiled sourly. "That cuts no ice with me, Doone. Women like Janice Milford don't make mistakes—or if they do they're *deliberate!* I'm not saying yet that she's deliberately killed five thousand people—but I do say she got rid of them for a reason . . ." He broke off, took a deep breath. "I believe," he said slowly, "that Janice Milford doesn't belong to this earth at all! I believe she's a denizen of another world—and more likely than not that world is Saturn!"

"Bunk!" Doone snorted.

"No it isn't. She has vast knowledge: she could easily make herself look like an Earth woman if she had a plan to work out. Saturn, for some reason, required five thousand Earth people and it was up to her to get them. She did—very effectually. That's my guess."

"And a damned rotten one!" Doone snapped, glaring. "I suppose she caused the deathlessness? Stopped the cosmic rays?"

"Possibly. A brilliant scientist could even do that."

DOONE stared incredulously, got to his feet. "But good Heavens, man, you can't be *serious?*" he cried. "You just can't be! Why, it would be even more logical to say that—that she's Brandon Hurst's daughter than a Saturnian!"

"I had considered that," Marden nodded calmly. "Here—take a look at these pictures of Eva and Mrs. Hurst from the photographic Bureau . . . that isn't the answer."

Doone picked up the prints from the papers on the desk. They were in natural color, depicted a robust woman of middle age, the tall, handsome Brandon Hurst himself, and then a young girl of perhaps twenty, dark haired and brown eyed, round faced, inclined to be stoutish—as utterly unlike the slender, beautiful Janice Milford as it was possible to imagine.

Doone tossed the photographs impatiently away, his mind running back over all the recollections of the girl he had ever had. Most of them were pleasant. Despite the shadow cast over her possible identity he still believed in her — Then suddenly, unexpectedly, he remembered something. It had been trying to struggle to fruition in his mind for weeks—the memory of a statement she had once made, afterward changing the subject so suddenly she had obviously been aware she had made a mistake.

"Good—Lord!" he ejaculated abruptly.

"What is it?" Marden's gray eyes were keen.

Doone stared at him wonderingly. "I—I just thought of something," he whispered. "Recently, Janice demonstrated to me that although she looks normal—where everybody else is obviously coarsened—she is actually as tough as the rest of us. I remarked on that fact and her answer was 'So Abel Dodd found out when he had me tortured . . .' But, when she was tortured the deathless anabolism had *not arrived!* She saw the mistake immediately after, and I was left trying to figure

out what she'd said that wasn't right."

"SO!" Marden breathed exultantly. "That implies she was as impervious to injury before the anabolism as after it—and the fact got out by accident. No wonder she was so stoic under torture and gave nothing away. Though the torturers managed to tear her skin and burn off her nails, she probably hardly felt it. It's the only possible explanation—normal flesh and blood could never have stood that—and a girl too—without some hint of breaking down. She's inhuman—unnatural!"

Doone looked harassed, rubbed his dark hair anxiously. "I—I still can't believe it, Marden. I—"

"There's one certain way of proving all this, I think," Marden said slowly, thinking. "If we assume that she is a masquerader from another world, it is distinctly unlikely that every one of her bones will be in the identical place of a normal earth woman, isn't it?"

"I should say most unlikely. Different worlds must have different life. Why?"

"We'll ask her to submit to an X-ray examination!" Marden cried triumphantly. "If she is a normal woman she'll raise no objection, but if she is a Saturanian with a cleverly modeled earthly structure she'll know the X-ray will give her away and she'll refuse!"

Doone's face cleared. "O. K.—that's a swell idea. I've not the least doubt she'll agree to—"

He broke off and turned as the main radio speaker suddenly came into action.

"World report! Cosmic rays are reported to be prevalent again in Europe! Flash! Cosmic rays reported returned to various parts of America. . . . Astronomers and scientists, please verify!"

The two men stared at each other for a moment.

"They've returned!" Doone breathed at least, his eyes shining. "Good Heavens, Marden—that means the earth is saved! Normalcy will come back and—"

The door opened suddenly and a clerk entered.

"Miss Janice Milford," he announced dispassionately.

MARDEN'S eyes narrowed again. "Show her in," he ordered briefly, and stood with his hands clasped behind him regarding the girl as she quietly entered.

She gave Marden a puzzled glance, smiled at Doone as he held forth a chair for her.

"Probably you've heard the news," she said presently. "The cosmic waves have returned almost simultaneously to all parts of the earth? I rather hoped I'd bring the good news first, but I hear the radio forestalled me. Not that it matters. The fact remains that at 10:12 this morning deathlessness passed from Earth and things will go back to normal. I thought a few personal observations might help, so I hurried along here."

"Very interesting, I'm sure." Marden took a chair opposite her and surveyed her coldly. "I suppose, then, that the five thousand or so people sent into space need never really have gone?" he asked icily.

"We could not have foreseen this." Her own blue eyes were perfectly frank and steady as she stared back at him.

Marden drummed his fingers on the desk. "So normalcy now returns?" he murmured. "Very, very convenient, I'm sure! Almost as convenient as the cosmic ray blockade in the first instance! You sent five thousand people into space for a reason, Miss Milford—and we demand to know why! Where are the space ships that were to return?"

"Either they met with some accident, or have been delayed."

"Damnably unconvincing, Miss Milford! Where did those five thousand people go to? *Why* did you send them into space? I do not believe for a single instant that your reason was genuine, though it sounded logical enough at the time. What was your real motive?"

The girl got suddenly to her feet, clearly offended.

"I did what was my duty in a world wide emergency!" she retorted. "You can place your own construction on that!"

"And by Heaven I do!" Marden roared, leaping up and gripping her arm. "You're nothing better than an imposter—a scientific genius who by clever trickery took five thousand innocent souls from Earth into space, probably to Saturn, for some ghastly reason best known to yourself!"

JANICE snatched her arm free, stared angrily.

"Whatever put that insane notion in your head, Marden?"

"Insane, is it? I'll go further and say that you are really a Saturnian creature made to resemble an earthly woman."

"Such ingenuity!" the girl observed icily.

"All right then, are you willing to prove your earthly origin?"

"Certainly I am. How?"

Marden smiled triumphantly. "If you are constructed exactly identical to a woman of earth, I'll believe you belong to this planet and will try and find the motive for your actions in some other way—but if you're not normally constructed your unearthly origin will be taken as a certainty and I can't answer for what may happen to you!"

"We want you to stand for a complete X-ray," Doone told her quietly. "You won't mind, of course? Medical experts will soon know what the plates reveal—"

"X-ray!" the girl gasped; then suddenly she swung round on Marden savagely. "Say, what do you think I am?" she demanded furiously, her eyes blazing. "Do you think I'm a specimen to be examined at will? You're both mad! Crazy! I won't submit to an X-ray or anything else like it! Think what you like, but I won't do it!"

Doone's expression changed. Marden grinned maliciously.

"After all, it's only to prove—" Doone began, but Marden cut him short.

"Save your breath, Doone—it's already proven! Miss Milford, your very refusal to such a simple test is proof of your guilt. The Hall of Justices will have plenty to say about this, and—"

"WAIT a minute!" Doone suddenly sprang in front of the girl, held Marden back with a powerful arm as he strode forward. "Wait a minute, Marden! I still believe you've gotten this all wrong. Janice—I mean, Miss Milford—acted from the best principles, and nothing will convince me otherwise. Not even X-rays!"

The girl shot him a grateful glance and Marden scowled.

"Don't be such a damned fool, Doone. This is no time for heroics! Hand that girl over!"

"When she's good and ready, not before!" Doone snapped, his jaw squaring. "The least you can do is to give her a chance to clear things up without jumping to conclusions. I'm going to see that she gets that chance. If you publish your crazy Saturnian idea to the people they'll tear her limb from limb. Five thousand people sent to doom by a Saturnian woman in disguise —! Think how it will sound! People

will have no mercy! They never have."

"Why should they have when it's true?" Marden demanded. "I'm going through with this, Doone, and you can't—"

He broke off as Doone suddenly whirled round and picked the surprised girl up in his arms. In an instant he had flung the door open and raced out with her into the corridor.

"Quickly—your place!" he panted, dropping her to her feet. "I know Marden; he'll stop at nothing! Let's go—we can talk later."

She nodded quickly, raced down the broad stairway as fast as she could go, with Doone immediately behind her. The instant the automobile door slammed the vehicle pulled away, moved swiftly into the swirl of traffic.

Two minutes later, breathless and scowling, Marden arrived on the steps of the Presidential building. At last he turned back, lips set in a thin line of decision.

CHAPTER VI

Besieged

ONCE the girl's home was gained, she and Doone went immediately to the laboratory. The girl gave a brief dismissal to her surprised staff, then pressed a series of switches which closed the metal shutters over the windows. Lights came up in the resultant darkness. Yet another series of switches slammed home bolts across the main door leading to the exterior.

"It almost looks as though you had anticipated trouble," Doone remarked at length, turning. "Am I right?"

"Not entirely—but I believe in being prepared." The girl regarded him with frank eyes. "You did a very wonderful thing this morning, Graham. . . . Don't mind me using your first name will you? You used mine this morning. Without knowing the real circumstances you had faith enough in me to protect me from Marden."

"I've always had faith in you, Janice," he answered quietly. "Even more than that. Several times I've tried to show you that I love you—"

"I know; and if I've seemed indifferent about it it has been because I can't let anything interfere with my work."

She turned aside for a moment and switched on the radio, smiled twistedly at the outpourings from the speaker.

". . . and I tell you, people of America and the world, that this woman is a traitor! Another world visitor using her knowledge to our detriment! We do not know how she stopped cosmic rays or caused them to resume. We do not even know her purpose: but we do know that she fired five thousand innocent people into space for no good reason. I call on you to seize this she-devil before—"

She switched off again, her eyes somber. Then she looked up and glanced round the laboratory.

"Well, they'll have a pretty hard job getting in here!" she commented. "It's explosive proof . . ." She glanced at Doone as he stood quietly before her. "Do *you* think I killed five thousand people?" she asked slowly.

"I wouldn't have stood by you if I'd thought that. But I do think it's time for you to tell the truth. I've shown my trust; now you show yours by giving me the real story. You realize what Marden is doing? He's fanning the public to a frenzy against you. You will be attacked, and though I love you enough to die for you if need be, it won't avail me much if I've never known the real reason. What *is* the reason?"

THE girl shrugged. "Well, even if I told you the truth I hardly think

you'd credit it. Everything is so utterly against me—there is such a lack of evidence until I get support from my father—that I dare not tell the real truth. That's why I've hidden it! If only those space ships would return I'd be vindicated. I can only assume I underestimated the time for the journey. Until they do come I've got to hold out against those who want my blood."

"Your father?" Doone's brows knitted. "Who is he?"

"Brandon Hurst." Janice made the statement quietly, with a faintly amused smile.

Doone eyed her coldly. "I thought you promised to tell the truth," he remarked disappointedly.

"That *is* the truth! You see how quickly you disbelieve me—and you're one who trusts me. How would those others react? You've seen my photographs as I used to be, I suppose? Well, who would think Eva Hurst and Janice Milford are one and the same?"

"It's impossible!" Doone gasped. "How on earth—"

"I *am* Eva Hurst!" the girl reaffirmed. "Janice Milford is an assumed name, and therefore there are no records of my birth or ancestors. When we three set out into space four years ago, father intended heading for the moon. But something went wrong. For one thing, the awful pace at which we shot into the void made us unconscious for days on end. When we recovered the ship had stopped accelerating and had reached a steady velocity. But we were nowhere near the moon. Gravitational cross currents had pulled us away from our objective and we were heading out towards the asteroids. We could either return to the moon, or take advantage of our far flung position and go outward.

"Father set about making tests of the planets, and being so much nearer to them than on earth, and unhampered by any atmosphere, he made a perfect analysis of each surface. Of the four outer worlds—or rather five if you include useless Pluto — Saturn appeared to be the best. After some difficulty with the rings, we landed . . ."

Janice—Eva—paused and frowned. "Our landing was violent," she muttered. "One of the forward blast tubes had cracked on coming through the Rings and we were without its very necessary braking assistance. I remember nothing of the landing except a terrific pains as I was flung among the instruments.

"The next thing I knew I was recovering consciousness amidst the smell of sweetish ointments, antiseptics, and so forth. I could hear deep, strange voices. I was utterly unable to move. Bandages covered every conceivable part of my body.

"As time passed I learned what had happened. The fall to Saturn had scrambled me up entirely. My limbs were broken, my skull crushed, my eyes torn out with splinters of glass. No earthly surgery could possibly have saved me . . ."

"Then?" Doone whispered, listening with wrapt attention.

"SATURN is inhabited," she said quietly. "Vast areas of its surface—about fifty percent—are populated. There are cities there, tenanted by a brilliant and kindly people—rather repulsive to look at but remarkably kind and gentle. It was these people who found the fallen space machine. My poor mother was killed outright, but father only suffered slight concussion. To all intents and purposes I was practically dead when the Saturnian surgeons took me to their laboratory.

"What they did, or how they did it, I shall never know. I only remember

weeks of lingering pain, of utter darkness, of hovering between life and death —then I began to mend. When at last I was able to see again I realized what they'd done. They had entirely remodeled me! Grafted new skin, given me artificial blue eyes like their own color, even set new hair roots of blonde color like their own. They had changed me from a rather ordinary looking, plump brunette into a blonde with vivid blue eyes. I personally liked the change enormously, but poor father couldn't at all get used to it. Much that they did was, in truth, only an advanced form of the work a plastic surgeon can do on earth today.

"One thing they had done, however, and that was to replace several of my shattered organs with new metal ones of a golden color. My heart, for instance, is metal. That was why I refused Marden's demand for an X-ray. The defects in structure would have shown clearly on the plates and he'd have jumped to the wrong conclusion."

"So that was it!" Doone murmured, nodding. "I'm beginning to see light at last. What happened next?"

"I found other things connected with that surgical operation. The Saturnians had given me eternal life and invulnerability—from all ordinary forms of injury that is—under the belief that I would desire it.

"The flesh process had made me invulnerable to all ordinary injury, therefore when Abel Dodd had my nails burned off and the flesh slowly torn with pliers from under my armpits I hardly felt it. That condition still remains. I made the mistake of revealing my eternity to you, you may remember?"

DOONE nodded, remained silent as she went on.

"In time we learned the language. Father could not be grateful enough to the scientists for saving my life. He offered anything he could in return. Then we learned that in making themselves eternal the Saturnians had altered the course of Nature. Eternal life, once it gets beyond a limit of about two hundred earthly years, destroys the power of reproduction. Saturnian men and women cannot reproduce their kind, nor can they create life synthetically. When they realized the tragedy that had befallen them they searched desperately for—and found—an antidote. They mated again, but it was useless. Their hundreds of years of eternity had changed them utterly. There would never be a birth again. What was even worse, the finding of the antidote had produced disease. Impregnable body structure, after so long a time, began to deteriorate rapidly. In another fifty years, perhaps, not a Saturnian will be left.

"So father and the Saturnians decided on a plan. Earth being the only populated planet in the system beside Saturn, there was no reason why Earthlings should not have the secrets of Saturnian science, together with its cities, as an interplanetary gift. The Saturnians were quite satisfied as to the desirability of the idea after seeing dad and I. Ultimately they would perhaps have taken Earth people by force and given them the legacy, only that would have meant hostility and by no means welcome to their peaceful ideas."

"So you came to Earth and put the plans in action?" Doone asked.

"Finally I did, yes, without anybody being aware of it—but first other matters had to be arranged. Father was needed on Saturn to arrange for the Earthlings when they came, and on Earth nobody would credit my identity. I'd have to use an alias. Then again, there had to be a *reason* for taking sev-

eral thousand people—who would multiply as time passed of course—from Earth to another world. To tell them the true story of Saturn would only have brought ridicule. The only alternative was to force them into it without them being aware of the persuasion. That was done by causing overcrowding which made a logical reason for being rid of thousands of people—all of them volunteers, remember. . . ."

"Then your scientific friends on Saturn were responsible for the cosmic ray stoppage?"

"Of course. They did it by complicated scientific processes of which I can only give the briefest outline. Where cosmic waves originate not even the Saturnians know, though they believe like us that they are possibly caused by the breakdown of matter in far distant parts of space. That is not of great concern: what really matters is that the greater proportion of cosmic waves cannot reach earth's surface because of the ionization of the atmosphere's upper levels. The greater the ionization the less waves can get through. That is well known. . . ."

Doone nodded slowly.

"Since ionization is simply the separation of positive and negative atoms composing the molecules of atmospheric gases and producing thereby negative and positive ions, and since also ionization on a large scale can be produced electrically, it only remained for the Saturnian scientists to generate an electrical effect of the appropriate intensity to cause a far higher ionization of the stratosphere than is normal. This they did, using an electromagnetic beam of the required intensity.

"It crossed space at the speed of light, timed exactly to strike and remain fixed on earth. Naturally the beam widened out as it traveled, until by the time it arrived here it was easily able to encompass the approximate 8,000 miles of Earth's diameter. The electromagnetism spread instantly through the entire upper level of the atmospheric envelope and deflected cosmic rays as completely as a mirror deflects light. No cosmic rays reached Earth, and as the scientists had calculated the stoppage created cellular changes and deathlessness, none of which affected me because I was already in that condition.

"KEEPING to their plan, the Saturnians waited until several thousands of Earth people had reached Saturn, then they cut off the blockade —this morning, as a matter of fact. Nobody has been harmed and my object has been accomplished.

"Of course my knowledge was handed to me by the scientists, and I used atomic force for space ships because it is definitely superior to father's' original method. In many ways the cosmic blockade did good—it stopped the civil war for one thing, which at one period threatened to ruin my plans. The rest you know."

"Why didn't you leave the moment your work was done?" Doone asked.

"For various reasons. I honestly expected the ships to be back before this. Once they come everything will be explained and proper Saturn-Earth negotiations can begin. As it is I'm left hanging in the air, so to speak. I've no proof. I've got to wait or . . . die."

The girl sighed a little. Doone took her arm tightly.

"It'll work out all right," he murmured. "Tell me something, will you? Are you forced to be eternal? Do you like it?"

She shook her head. "Not really. If I ever clear up the mess I'll use the antidote and come back to normal. It has had advantages up to now, particu-

larly under torture. But I'd sooner be a normal woman anytime. Besides—"

She broke off and looked up sharply at the sound of distant voices, rising gradually into a swelling murmur that grew with the moments. The girl's face tensed and her rounded chin set firmly. Doone gave her a quick glance as she turned to the nearest window and pressed the shutter switch. In grim silence they looked out together at a mob of people surging into the grounds around the laboratory. They seemed to be coming from every direction, armed with rifles and varied types of implements.

Doone's face set like granite.

"Give me a gun!" he snapped. "I'll hold them off somehow while you get away. You might be able to manage it —keep in hiding until something happens to clear things up."

Eva sighed. "I haven't a gun," she muttered. "And anyway I don't think it would do any good to escape. Besides, I don't want anybody to be hurt if it can possibly be avoided. Everything has gone all right up to now. . . ."

She pressed the button and the shutter reclosed. They both stood in silence, listening to the whang of bullets against the shutters, the thundering of fists and implements on the door, the bawling of voices.

AFTER a moment or two Doone cautiously opened the shutter again and studied the proceedings. Men and women were around the laboratory door, working industriously with an oxyacetylene torch. He glanced at the interior side of the door; so far there was no sign of collapse. The metal was tremendously strong, far in excess of steel itself. He wondered anxiously why there were no police on the scene to quell the riot, then remembering Marden, the co-President, was back of it all his wonder ceased. Obviously the police had received orders not to interfere.

He made to turn from the window, only to start suddenly as the glass splintered under the impact of a long pole stabbed from outside. Instantly he depressed the shutter button, but the shield could not close against the pole. It was being wielded as fiercely as a lever: it slammed the shutter back in its slots, broke the mechanism, and Doone sprang backwards to avoid the shower of glass that came cascading inward.

Instantly he crossed to the girl and threw an arm protectingly around her shoulders, clenched his right fist for action.

In a moment two vengeful men's faces appeared in the opening. One of them shouted back to the crowd outside —then they began to scramble through, kicking the remaining glass away with their boots. Doone watched them through narrowed eyes as they dropped to the floor and commenced to advance.

One after another men and women scrambled through the gap, faces set and resolute. One or two of them snapped over the door lock switch and permitted a fresh flood of humanity to vomit inwards. Doone, watching them, realized immediately that they represented the lower classes of humanity—those who believed what they were told and who never troubled to reason for themselves. To them Marden's bitter radio indictment of the girl had made the most direct appeal.

THE foremost man halted at last, breathing hard, motioned to the others to stop.

"President Doone, eh?" he demanded, sneering. "Shielding this creature from another world? The one who

told everybody what to do, was planning to fire us all into space if she had her way."

"You've got this all wrong!" Doone snapped. "She's an Earth woman, you fools! Not one of those people who went into space is hurt—"

"Yeah? Then why don't the ships come back and prove it?"

"They will—in time," Doone said desperately. "You've—"

"If this woman isn't a creature from another world dressed up like a dame, who in hell is she? Why didn't she submit to Marden's X-ray? What's her game?"

"She's—she's Eva Hurst . . ." Doone made the statement helplessly, and as he had expected there was a yell of derision.

"Lies only make it worse!" the man snapped. "Marden gave us the truth over the radio, and you're about as bad as this woman is. She's a mass murderer, and we intend to show her how foreigners from other planets get treated, 'specially when they take our friends and kill them. We're taking the law into our own hands, and nobody's going to stop us! Grab her, boys!"

"No—no, wait!" Doone gasped frantically, but he was hurled backward with a blow on the jaw before he could rush to the struggling girl's assistance.

He saw her lifted into the air, kicking and threshing wildly—then he too was seized and borne along a few yards behind her. Punched and pounded by the infuriated mob they were dragged out into the grounds, round the laboratory, and finally to the massive oak trees bordering the grounds. There they were set down, their wrists fastened securely behind them.

"Well, what now?" Doone demanded, glaring.

"You'll find out . . ." The leader of the party smiled twistedly. "I guess a length of rope round your necks will put you both well on the way to eternity, especially as nobody's deathless anymore. This may be rough justice, but it's the justice of ordinary people who know nothing about science or space traveling. All we know is that among our sons and daughters and friends were several volunteers who went into space —and we mean to exact revenge for their deaths. You too, Doone—you're as bad as this she devil."

"Aw, quit talkin', Jeff, and get busy!" yelled somebody.

"Hangin's too good for 'em!" one man bawled, waving a clenched fist. "Hang Doone if you like, but give the dame a slow death! Let her go through what the others did, out in space—"

"She wants lynching, that's what!"

"Hang her by the heels!" yelled a sour faced woman.

Doone made a desperate, futile effort to free himself.

"Listen, folks—you've got to listen!" he cried hoarsely. "If you do this thing you'll never forgive yourselves! Marden's the one to blame for all this—"

"Let's get started!" the leader interrupted briefly, took two stout ropes from one of the men and tossed them over the tree branch. Significantly he noosed the ends.

THE crowd surged forward to assist him as the nooses slid over two necks. Doone and Eva kicked and struggled madly as their limbs were tightly bound. At last the crowd stood back to admire its handiwork, then moved to seize the rope slacks and pull upon them—

But they never got that far. At that moment the sour faced woman suddenly gave a shout.

"Wait! Look up there—!"

The people turned, hesitated, stared

aloft in amazement at an egg shaped, silvery vessel dropping slowly from the clouds in the direction of central New York.

The people scattered wildly out of the track of the vessel's scorching underblasts as it began to settle down near the laboratory. Again it shifted, came to rest gently not ten yards away.

There was a moment's pause then the airlock opened. A tall gray headed, handsome man came slowly into view —and immediately the crowd gave a tremendous roar.

"It's Brandon Hurst!"

"The guy who went to the moon!"

"Father!" the girl screamed, and her voice cut over the roar of the crowd. "Father! Quick!"

Hurst looked across in her direction, made a quick signal inside the ship. In a moment, followed by seven other men armed with deadly looking weapons he had passed through the crowd to the girl's side, savagely flung off the noose from her neck, drew her into his arms as she began to weep unrestrainedly.

"Oh, Dad, thank God you came—"

Eva broke off, gulped down her tears.

"Lucky I did, I guess," Hurst said grimly, glancing at Doone as he too was released. Then he turned back to the astounded, still half suspicious people.

"HAVE you idiots gone insane?" he demanded angrily. "Don't you realize that this girl is my daughter? No, I guess not," he went on quietly. "I'd forgotten the changed appearance. Anyway, you can take it from me that all those people who left earth are not only well and safe, but happier than they've ever been in their lives before! These men here with me are some of the volunteers who made the journey. Do they look too bad?"

The people were silenced, waited for Hurst to continue.

"The delay in coming back to Earth was caused by various difficulties coming tbrough the asteroid belt," he went on quietly. "It knocked days onto our schedule. I came as well because I had the idea my daugbter might be in difficulties if tbings were not cleared up. Besides, there are matters of interplanetary negotiation which only I can handle . . ." He broke off and turned to Doone. "Where's the President?" he asked briefly.

Doone smiled faintly, told him the whole story of Marden's disbelief. At the end of it Hurst turned back to the people.

"Well, now you've heard the truth," he remarked quietly. "You've seen how near you came to hanging a girl who has all but given her life in the service of space pioneering. Lucky it was tbat I saw this disturbance from the ship and came to investigate. What are you going to do about it?"

Tbe crowd was silent for a moment, then the sour faced woman shouted:

"Where's Marden?"

"Find Marden!"

"He's the man we want—!"

They turned, surged away. Hurst looked after them with somber eyes.

"I rather fancy there is little doubt whom the next President will be when the full story is published," he remarked. "A President of America and first ruler of the new Saturnian colony. Also, Doone, when the final details are complete you must come to Saturn and assure yourself of the enormous possibilities that await us there."

"I'm assured of it already." Doone smiled, glancing at the girl.

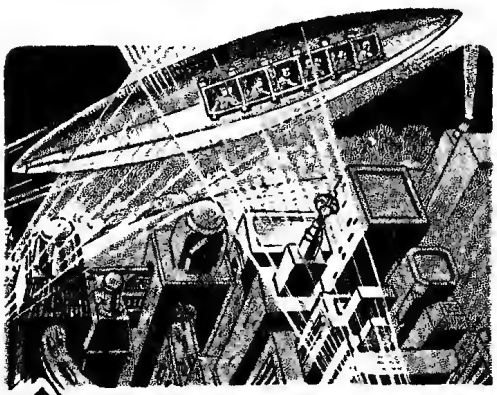
He was right too. They made the trip their boneymoon, and when they returned to Earth to complete further negotiations Janice Milford was literally dead, and even Eva Hurst was not eternal.

RIDDLES OF SCIENCE

The Lost Continent of Lemuria.

MORE THAN **12,000 YEARS AGO** A **CONTINENT** IS SUPPOSED TO HAVE OCCUPIED THE AREA NOW COVERED BY THE INDIAN OCEAN, AND WHICH WAS **DESTROYED** IN A WORLD CATACLYSM

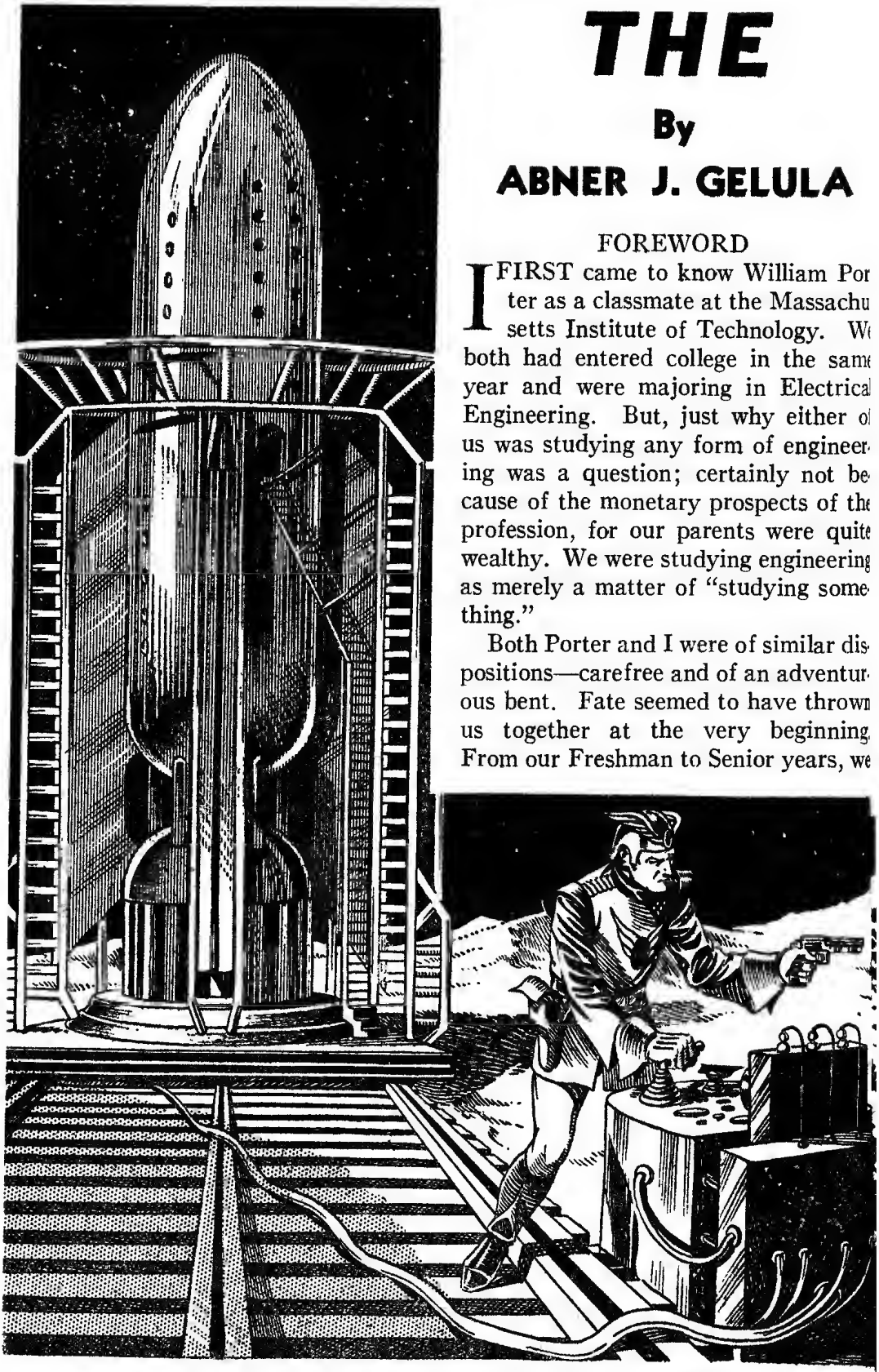
LEMURIA IS REPUTED TO BE THE **MOTHERLAND** OF ALL HUMAN RACES, THOSE EXISTING NOW HAVING ORIGINALLY BEEN **COLONIES OF MU**. EVEN **ATLANTIS** WAS A COLONY WHICH GREW SO POWERFUL IT REVOLTED AND SET UP **ITS OWN GOVERNMENT** . .



TODAY'S SCIENCE IS NOTHING COMPARED TO THAT ACCREDITED TO **MU**. SHE HAD **AIRSHIPS** THAT **DEFIED GRAVITY**, AND RAN BY SOME STRANGE POWER THAT REQUIRED **NO MOTORS**.

LEGEND ATTRIBUTES THE **CATASTROPHE** THAT OVERWHELMED THE CONTINENT TO THE WORK OF MAN. PERHAPS A **MINING OPERATION** TO THE INNER HEATED CORE OF MAGMA, WHICH ALLOWED THE SEA TO ENTER AND RESULTED IN A VAST **EXPLOSION** . .

ACCORDING to ancient legend and sacred Indian tablets, Mu was a country of 64,000,000 inhabitants, who, from 50,000 to 12,000 years ago developed a civilization in many respects superior to our own. The Garden of Eden is supposed to have been in Lemuria. Some legends place the continent in the Pacific, but greater evidence points to the Indian Ocean. But Lemuria was a land of three separate divisions, and it may really have been three separate continents. Science may yet unlock its age old secrets.



THE

By ABNER J. GELULA

FOREWORD

I FIRST came to know William Por ter as a classmate at the Massachu setts Institute of Technology. W both had entered college in the sam year and were majoring in Electrica Engineering. But, just why either o us was studying any form of engineer ing was a question; certainly not be cause of the monetary prospects of th profession, for our parents were quit wealthy. We were studying engineerin as merely a matter of "studying some thing."

Both Porter and I were of similar dis positions—carefree and of an adventur ous bent. Fate seemed to have throwr us together at the very beginning. From our Freshman to Senior years, we

In a moment the deadly rocket would launch itself into the stratosphere

WHISTLING DEATH

Called upon to destroy the nation he had deserted, William Porter, American, faced the might of Moravia . . . alone!

were roommates, and with each succeeding year, our hopes and ambitions found a more common ground. It was not unusual, therefore, that our paths continued parallel even in the decision, upon being graduated, that other fields than the pursuit of Engineering held a greater lure—especially since the compensatory item was of no consideration. We both craved something that possessed greater prospects of action and adventure; to do and see things that Engineering could never afford us.

Accordingly, we decided to enter newspaper work and, through the aid of family contacts, secured positions on the staff of the Chicago Daily News.

The activity associated with this work fitted perfectly with our mutual ambitions for adventure. So enthusiastic did we become in our new field, and so varied were our duties that, after about a year we decided to attempt specialization in a particular branch of reporting. From the outset, Porter wanted a post in the Washington bureau of the newspaper. I, still holding a secret notion of eventually finding some use for my engineering training, hoped for a post of Science Editor—to become an expert in the art of correctly reporting news of a scientific nature.

In the meantime, however, as a hobby, we had set up for ourselves a small electrical laboratory where, after a hectic day, we would tinker with various ray-tubes, high voltages, and similar apparatus only of a dangerous nature for the thrill of experimenting.

Porter might have become an electri-

Not a man moved in the tenseness of the stark tragedy facing them

William Porter

cal wizard if he had stuck to the game, but since it failed to produce the thrills that he demanded of life, it took a secondary place in his plan of existence.

IT was about a year later that a vacancy occurred in the staff of the Washington office, and by dint of pleading, and promising, Porter finally was given opportunity to fill the long-cherished position.

Within two years he became, through sheer ability, one of the recognized authorities on Washington official life. Some of the best and most important stories of national and international interest originated from his pen.

Then the Wanderlust again seized him. Nothing but becoming a foreign correspondent could satisfy. The prestige he gained in the fine work done at Washington minimized his difficulty in being appointed representative of the Daily News, in Moravia, when the vacancy occurred.

The idea of settling in a country that was rapidly becoming one of the world powers; coming into close contact, with a new form of government, radically different from any other, thrilled him. It appealed to his sense of adventure. When he told me of his appointment he urged that I accompany him, and only with some hesitation did I agree. Secretly, I also craved a change of scene and activity.

For a time I was "on my own" in Moravia. My paper would not sanction another American in their foreign office, explaining that it was sufficient trouble to "break in one green man."

But Porter proved that he wasn't so green. The success he made as a Washington correspondent was meagre compared to the abilities he displayed in handling news of foreign diplomatic problems, particularly those directly associated with the Moravian government. In fact, so tactful and well-written were his reports that in a comparatively short time the Moravian authorities took cognizance of him and he was given an increasingly greater access to places and people ordinarily barred to others. Obviously, his value to the Daily News grew correspondingly and, in time, his request that I be added to his staff, was granted.

Porter was a good newspaper man. Yet his ability was not necessarily of a particularly keen "nose for news," or an unusual writing ability. In fact, I never believed him to be possessed of either of these qualities to any exceptional degree. But he did seem to have a sort of sixth sense—a psychological sense that permitted him to weave his way into inner circles.

If ever fate took a hand in the destiny of a man's life, Porter was the example. Little did anyone realize the

part he was destined to play in the salvation of his native country—and possibly the entire civilized world as he, step by step, came into the strategic position planned for him by some Greater Force.

IT was during his coverage of routine matters that, one day, Porter received a note from the office of the Commissionaire of State, asking that he call upon him. The following day found him at the appointed hour in the office of Millard Belin.

A stately, aristocratic person of powerful proportions gave Porter a slight nod of recognition as he entered. Porter knew Kitman, Belin's secretary, from previous visits. His steel-grey eyes overshadowed by heavy, black brows gave a feeling of something akin to determination—determination that seemed to border upon cruelty. A neatly trimmed beard and mustache aided in hiding any facial expression which might tend to bespeak that which he refused to voice. Kitman was always cold, mysterious sort who kept aloof from news and newspapermen.

Porter waited but a few moments before being ushered into the presence of Mr. Belin, who held one of the most important posts in all Moravia. With him were two other men whom I knew by previous contacts: John Litten, Chief of the Division of Communications, corresponding to the American Post Office; and Louis Antar of the Bureau of Censorship.

One was drawn almost irresistibly to Belin. Just what it was in his dynamic personality that held so powerful a lure, would be difficult to define. In stature he was little more than five feet, six inches; his body, in keeping with his height, was of slight build weighing hardly more than 130 pounds. Neither his dress nor his demeanor was of the

Millard Belin

impressive type that one might expect to find in a man of his position. Indeed, his whole being gave little note of authority or of an official nature.

But he radiated personality. His head appeared to be a bit too large for the body; his black, wavy hair combed carelessly back from an expansive forehead, seemed to accenuate the illusion. Although I had often spoken to Belin in the course of my reportorial duties, and fully appreciated the greatness of the man, it was the future that was to reveal his true genius.

I knew also, from previous visits, Litten and Antar. Typical Moravians who grew up with the new nation, they were not particularly impressive and a curt nod of recognition completed the formalities of Porter's entrance.

LITTLE time was lost in launching upon the subject of the call. Belin

opened with a question regarding Porter's opinion of Moravia, to which he replied that he was fully in accord with its ambitions and considered its commercial and diplomatic progress remarkable.

He was then asked as to whether he had any definite plans for the future.

"According to present indications, Moravia apparently holds the greatest opportunity for me," Porter replied, "and I believe that I shall continue to represent American news interests here."

Belin toyed with a pencil on his desk, as if deeply interested in its composition. No one spoke for several minutes. The two other officials present adjusted themselves in their chairs, during the lull, seemingly bored with the progress of the meeting.

"A new office is to be created in my department," Belin began. Then, characteristically, the next sentence brought the climax. "It is my desire that you fill this post. I feel certain that you are particularly fitted to make it a worthy and successful adjunct to this government—more so than any one else. The position is of extreme importance and requires not only a knowledge of the work, but a firm patriotism built upon reason rather than upon a vacant idealism. The office will come under the jurisdiction of the Bureau of Censorship. You will head this office which will be of any logical number of assistants that you may deem advisable. This post, in your case would, of course, necessitate one thing: to relinquish citizenship in the United States and becoming a citizen of Moravia."

Whether the fact speaks well or ill of Porter, it remains that he was never squeamish about emotional ideals, although obviously, he did not relish the idea of foregoing his American citizenship. However, he reflected, he was in Moravia now and was happy and contented in the progress he was making in starting, practically, with the beginning of a new nation and becoming a part of its history.

He reasoned that to accept Belin's offer might be the logical thing to do, despite the requirements. Especially so in view of the fact that he was being offered a position that would allow a definite part in moulding the life and destiny of 175,000,000 persons of this new nation. So Porter extended his hand in acceptance.

NEITHER Belin nor the other two officials commented regarding Porter's acceptance, but a smile of satisfaction and faintly perceptible nod of approval came from Belin which seemed to reveal a feeling of a new cordiality, for now Porter was a Moravian and, to all practical purposes a member of that inner circle which controlled the thoughts and activities and the very lives of a vast portion of the world's population.

Porter's work came under the direction of Antar, although he rarely interfered with the procedure of the new office. More often, however, Porter was in contact with Belin. It was only during an executive conference, did he have any contact with other officials of the government. All statements or "news" for public consumption came to him by an approved correspondent from the various departments. Personally, he did no reporting except at conference where he was the only person present who was not a department chief.

It may seem unusual that so great a confidence was reposed in Porter. But it should be understood that for a long time this confidence had not been extended. Porter was continually aware of being under the eye of the Moravian Intelligence Service and only that his

office was for the preparation and proper dissemination of reports, truthful or otherwise, there was little that the government had to fear. Fully 75 per cent of all propaganda was directed for release in the United States of America because thus far this was the only country which had not officially recognized the new nation. Porter's knowledge of official America as well as American newspaper requirements, was particularly valuable to the government and apparently only because of this, was Porter, rather than a Moravian newspaperman, selected for the post.

Even after two years as chief of the Bureau, lack of a complete confidence in his secretiveness became particularly apparent when an executive session was called and he was notified that, at this meeting, it would not be necessary that he attend. I tried to find out what occurred in that session, but I wasn't to know until it was brought to me some time later in a rather startling manner.

Before I launch my story, something should be known of the tactics and trend of thought of the Moravian executive mind.

Under the leadership of an autocratic dictator, Sartito Michel, Moravia was rapidly gaining a place for itself in the first line of nations. However, because of its radical form of government, difficulty was found in receiving diplomatic recognition from other countries, particularly the United States. The upheaval and overthrow of a monarchy brought about a new idealistic governing force that, to all indications, might eventually become practical and be a marked improvement over other governing powers of the world.

Michel sat at the rudder of State—invisible, invincible and unapproachable. All thoughts, hopes, ambitions and plans met in him. Calmly, without haste, he imparted orders; raised some,

Ivan Stemenov

crushed others; bought and sold heads and souls.

Snarling doors of overcrowded prisons closed behind an ever-increasing number of political victims. Human blood flowed like water. Curses and groans were heard amid the cheers. The eternal law of survival of the fittest was here worked out to the letter. But one thought ruled official Moravia: the Moravian doctrine must reach to the corners of the earth. Those who would deter its progress must be crushed before its irresistible onward march!

CHAPTER I

For the Advancement of Moravia!

SIX pairs of eyes were focused upon Professor Ivan Stemenov as he rose slowly from a comfortable overstuffed chair and turned majestically to face the Executive Council.

He was in no apparent hurry to begin his little talk. Seconds passed silently as he eyed, visually appraising, each of the highest officials of the United Unions of Moravia who were seated before him. He toyed carelessly with the spectacles he had removed from his nose. A powerful, arrogant air seemed to pervade from the man that radiated a self-confidence to an almost insufferable degree:

Groomed to perfection in striped trousers, frock coat and meticulously trimmed goatee and mustache, the noted scientist presented an appearance almost satanic.

Only Michel, grim, cold and calculating, knew why the noted scientist was present. Only Michel, all-powerful of the Moravian Union, could conceive a plan as was to be outlined here. Only Michel, determined, immovable, resolute, the man without heart or conscience, would allow even a discussion of the subject that was here to be considered seriously.

As to the composition of the Council, more properly referred to as the "Council of Six," each was a supreme dictator over his individual department. As to each man's associations and the destinies he controlled, let us not concern ourselves. Suffice to say that compared with Michel, they were inconsequential, with the exception of Belin.

Michel's introduction of the scientist was short:

"I shall not attempt to explain Professor Stemenov's plan, nor shall I go into the details of how such a plan may be effectively worked out. We are, gentlemen, interested only in results.

"Every country of the world, with the exception of the United States of America, as you know, officially recognizes Moravia on a diplomatic basis. America's official recognition of our nation has now become almost a necessity. International commerce has become increasingly difficult with the barriers set up by the United States government. Efforts to bring about a favorable diplomatic relationship by either negotiation or financial coercion have proven to no avail. It would be least desirable at the present moment to seek an open break or hostilities with that country, for obvious reasons, although we certainly need not fear it. There is, however, another way that will definitely bring about the desired result, and that way will be pointed out by the learned professor who is in our midst today.

"ALTHOUGH unaware of it, Professor Stemenov has been watched closely by our Intelligence Service, and all reports show him to be staunchly pro-Moravian. Indeed, if he were otherwise, the plan would never have been broached to you gentlemen today.

"In deciding upon the use of the plan, I ask only that you consider your country and its future. I ask that you cast from your hearts any feeling of conscience, for the dictates of conscience is rarely logical reasoning."

Michel paused a moment, looked into the eyes of each man facing him, as if reading their minds, then continued:

"Only by the disruption of capitalistic power can Moravia ever hope to break America's resistance. We must win over the individual citizen in a way that demands judicious handling. The united opinion of the American citizen can force the opening of diplomatic relations. And the only way possible to foster this pressure is to strike at that which he holds most dear—his dollar! If that becomes valueless, the collapse of the entire capitalistic system will ensue! When that occurs, like drowning men these Americans will clutch at a straw! Then Moravia steps into the picture. Just how this will happen, I

hope to explain after Professor Stemenov tells you of his discovery."

Michel turned to Professor Stemenov, and without further formalities, the eminent Moravian biologist and scientist spoke.

"I am happy that our great leader, Comrade Michel, stressed the point regarding conscience," he began, "for what I have to say, and what I have to offer for the future welfare of Moravia and the world, will cost *lives!*" A powerful fist was brought heavily upon the table to lend emphasis to the statement. "To falter because of sentimental reasons makes your hopes again a thing of the future. To act in a favorable and, if I may, a fearless manner, means that the day of Moravian supremacy is close at hand."

THE council was all attention. The usual interjections on the part of members was conspicuously absent. Each man seemed to become an entity rather than a part of the group. An air of anticipation filled the small, heavily-draped room. The rise or fall of a nation might hinge on the decision reached here today. Professor Stemenov, taking a leather case from his pocket, opened it and produced two vials. He continued:

"These two tubes contain the key to the entire plan. One vial contains a deadly germ; the other contains the only known serum. There are many germs of a deadly nature known throughout the civilized world, it is true. But this organism is a wholly new discovery as far as the world of science knows. This particular organism is unusual in the biological world, for it is communicable only by contact with an article of the same composition with which it is originally infected. It is not contagious and its spread is limited to that medium which originally carried it. The very constitution of this unique micro-organism is such that it immediately accustoms itself to a definite condition and, until that condition is forcibly changed, it is loath to change the nature of its surroundings an iota!

"Indeed, in my experiments I found difficulty in fostering the development of the original germ under a change of conditions. When I infected a piece of Maple wood, for instance, and carefully nurtured the growth of the organisms on it until generations of the germ had become thoroughly accustomed to the conditions it presented, another type of wood, such as oak, when introduced, failed to become infected although other pieces of maple were at once seized upon by the germ!

"And further, so uncanny is the organism's sense of desirable conditions, that it readily distinguishes even grades of paper! Germs reproducing under conditions presented by a certain pulp paper do not infect pulp paper made of another wood, even though it differed but slightly! Similarly, various rag papers are also distinguished by the germ.

"The germ, as it affects the human system, is similar to tetanus, but much more rapid. Persons contracting the disease rarely survive unless the serum is applied in time, death ensuing within two days. And, most remarkable, the germ will leave its adapted environment of generations only for live tissue such as the human body, into which it makes entrance by an opening in the skin, regardless of how minute that break may be. No infection ensues where the germ enters, thus leaving no clue or trace of the individual's having been unwittingly innoculated.

"Now to propound the plan! As I explained, the germ will infect only that which has originally been infected as the carrier. Disintegration of the car-

rier is comparatively slow, although reproduction of the germ is remarkably rapid under practically all conditions except extreme cold or heat."

The professor's tone changed in preparation for his next statement, accenting each word as if insinuating an added meaning while bespeaking the facts. "It would be a comparatively simple matter to originally infect a small quantity of paper money. The spread of this infection would be taken care of automatically for the contact of other paper currency with the infected bills assures an ever-growing number of carriers."

THE Council was held spellbound by the audacity and possibilities of the plan as it began to reveal itself.

"Under test, the germ will infect no other paper, for the quality of the paper and the ink used in the manufacture of currency is such that, of necessity, it is practically exclusive. Further, the germ will, in time, so accustom itself to currency as to actually die before it will change or infect any other medium, excepting live tissues.

"For the advancement of Moravia and for the future of mankind the plan evolved will result in considerably less fatalities than the war which otherwise inevitably looms upon the distant horizon. Through means of which you shall later learn, the people will hear that currency is the carrier of the germ, after thousands have succumbed to its ravages. The result is obvious: the populace will immediately discard the use of money. Business will come to a halt. Panic will ensue. Merchants will hesitate to extend credit on purchases. Only one hope will remain: the citizen must give ear to a plan that promises succor to him and his family.

"Moravia will become the 'Big Brother.' She will offer aid to alleviate the suffering. Foodstuffs will be shipped in to be given away to the unfortunates while the United States, seeing no return on its investment because of the collapse of the monetary system, will store its food as it has been wont to do in the past. A new feeling will be built up towards Moravia. Despite the diplomatic persecution to which she has been subjected, she aids the nation that has tried to block her progress! Sort of an enforcement of the 'Golden Rule.'

"Then to top the climax, a Moravian scientist will discover a serum to eliminate the disease, and Moravia's place in the world will be restored, for who could hold hate against one who has befriended another in a time of need?"

PROFESSOR STEMENOV carefully replaced the container of two vials to his pocket, and returned to his seat. Michel arose and demanded order, for the plan had thrown the entire Council into a hasty informal conference. He asked the opinion of the individual members of the Council and all immediately signified their hearty accord with the plan—except Belin.

"The plan that Comrade Stemenov has laid before us is stupendous and doubtless will have far-reaching results," Belin said. "But it seems to me that an attempt to force an issue by this means may prove to be a boomerang: Moravia is in no position to invite the hostile attitude of the world. If the world should ever learn of the effort made by Moravia to leap to recognition by this means, the results might be disastrous; Particularly, the target country—the United States of America—which hold the commercial power of the earth, could easily sever completely all trade and industrial contacts.

"To break down her commerce will directly affect our country for, regardless of official recognition, Moravia does an individual business with Amer-

ica on a large scale. Gentlemen, you cannot play with the destinies of 130,000,000 people without radically affecting the status of your own. Moravia owes too much to America for its present position. Our every industry utilizes Americans to teach our people the various trades. In my judgment, we would do far better to gain a desired superiority by producing a superior product—not by the undermining of another nation or the destruction of its people!"

A sneer crept across the face of the scientist as he listened to the remarks of the Council member. "It seems, Comrade Belin, that you are being guided by your heart rather than your brain," he ventured without rising from his complacent position in the heavily upholstered chair. Belin made no reply.

However, little attention was directed to Belin's opinion other than the terse comment of Michel that "unless another member feels as Comrade Belin does, we shall table the matter and make a definite decision at our next meeting."

CHAPTER II

Deadly Dollars

SCARCELY three months had elapsed since the time Professor Stemenov had laid his diabolical plan before the governing body of Six in the Council Chamber. The death toll in the United States was mounting rapidly. Already more than 100,000 persons had succumbed from a terrible unknown malady, and health authorities as well as scientists were at a loss in their attempts to either trace the source of the plague or to isolate the germ.

Each day entered the names of thousands more who were victims of the disease. Quarantines, serums, precautions or preventatives were of small aid in stemming the wholesale advance of death. Statistics gathered regarding the disease did, however, show several salient facts: First, that the new cases reported on Sunday were always greatly less than on weekdays; second, that the spread of the disease seemed to be limited to the borders or slightly beyond the borders of United States; third, that persons confined in various institutions such as hospitals, prisons, and asylums seemed to be practically immune; and fourth, child victims were greatly in the minority.

These facts were studied by the most eminent scientists in the country, but there seemed to be no interlinking facts that would even remotely suggest the character of the plague. Every class, color and creed was affected, but it was the vast "middle-class" that supplied the greatest number of victims. The effects of the disease had already made itself known in the business world. Insurance companies refused to pay indemnities to heirs of those who died from the plague. Fear of being the next victim of the horror held people within their homes. As a precautionary measure, despite assurances on the part of the medical profession that the disease was not contagious, all centers of amusement or wherever crowds gathered, were ordered closed.

THEN suddenly, came the discovery from an obscure physician that the germ was carried on currency—on the money of the country! This astounding fact was disclosed to an under-secretary of the Treasury. Biologists from the Bureau of Standards were summoned to affirm the doctor's statement with the resultant report substantiating the claim.

A Cabinet conference was called to apprise the department heads of the condition. To halt suddenly the circulation of currency would entirely dis-

rupt the business of the nation, and a plan advanced by one of the Bureau biologists was believed to be the most advisable until further means could be found to curb the malady without affecting the financial and commercial status of the country. Those who were apprised of the recently learned facts were warned to hold the secret inviolate for upon their confidence rested the security of the nation.

Newspapers the following day carried blaring headlines that a preventative had been discovered. All those who would be free of the disease were advised to don rubber gloves immediately upon arising in the morning and not to be removed until retiring at night. Bowls of disinfectants must be kept handy in every home, at convenient places in every store or office, and on specially constructed stands in the streets. And, under no circumstances should the rubber gloves be removed except when the hands as well as the gloves were washed in the disinfectant.

This announcement, kept on the front pages of every newspaper day after day, broadcast by every radio station, thrown on the screen of every theatre, distributed to every home by mail, placarded on every fence and billboard, caused a furor. No explanation was forthcoming and only the blatant facts displayed by the announcement wherever anyone looked or heard, brought demands from press and public.

The people heeded the warning, however, resulting in an immediate drop in cases reported. Upon investigation, it was found that new victims were composed almost wholly of those who disregarded the broadcast announcements. As the number of cases diminished, a sigh of relief swept the country.

OFFICIAL Washington, however, was not asleep. The Federal Bureau of Investigation brought some startling facts to the Secretary of State. In a florist's greenhouse located in New York City, a complete biological laboratory was found. An unwonted activity of "messenger boys" going in and out caused one of the agents to stop one a few blocks from the greenhouse and inquire as to the kind of flowers in the flower box he carried.

Informed that they were roses, the messenger boy started away on the motorcycle-sidecar vehicle he was riding. The secret service man, detained him, however, asking if he would sell him the roses, producing a $20 bill.

"These flowers are extra fine and there are a lot of 'em, Mister. More than $20 worth. Besides, if you want some, why don't you go over to the store and buy them? I can't sell you these."

"I'll give you *five hundred dollars* for those flowers," the operative ventured, in a determined effort to find out just how much of a messenger he was, or what kind of flowers would cause this display of hesitancy.

"Can't sell 'em," the messenger declared with finality and turning the handle of the accelerator of the machine which was held in gear, he sped off.

Assured by the attitude displayed that there was "something in the wind," the operative commandeered a nearby taxi and after displaying a badge, gave orders to chase the motorcycle. As the cab drew close to its quarry, the cycle increased speed despite the dangers of heavy traffic. Then suddenly, the cycle swerved into a side street. But the messenger miscalculated his speed and distance in an effort to get away from his pursurer.

Amid a screeching of brakes and the cries of passersby, the cycle crashed headlong into the side of a building catapulting the driver against the wall, killing him instantly. The pursuing cab

drove up and the agent rapidly elbowed his way through the growing crowd. Identifying himself to the two policemen who hurried to the scene, he opened the side car and removed the large box of flowers. Taking it under his arm, he went into a nearby building and opened it. Much to his chagrin, the opened box *did* contain flowers—and they were roses!

He looked the flowers over carefully, but could see nothing unusual about them other than, as the messenger had told him, they were extra fine roses. His impulsiveness might now result in serious charges against him in the death of the messenger. He returned to headquarters and explained the entire affair, producing the box of flowers which he carefully carried. The chief looked at the roses and remarked how unusually beautiful they were and, with giving particular thought to the predicament of the operator, placed the flowers in a vase on the desk of his secretary. It was while crumpling the box so that it would fit in the waste basket that something unusual attracted his attention.

"Say, this is heavy for a cardboard box," he commented.

THE agent was immediately alert. Grabbing the box from his hand, he proceeded to rip it apart and in a few moments, hundreds of five-dollar bills dropped to the floor.

"What's this?" the chief exclaimed, "Where did all that dough come from?"

"From a false bottom in that flower box," the operative returned. "I knew there was something phoney about this thing. Funny that the false bottom stunt slipped my mind. Looks like a bunch of counterfeiters to me, and I know where they are. How about a few choice men and a warrant for a little raiding party? We've got to be snappy about it before that gang gets word that their messenger got knocked off!"

In a comparatively short time, the police, led by the secret service agent, were inside the greenhouse. While the occupants were detained, the police searched the interior but could locate no machinery or engraving paraphernalia. In a large room in the rear of the flower shop, however, a laboratory in which were a number of test tubes and a few stacks of currency was discovered. But this was slim evidence upon which to link counterfeiting with the place—especially since it had been determined that the bills were not counterfeit!

A newspaper reporter who accompanied the raiding party knew something of chemistry and began a little research on his own account. Calling the secret service agent's attention to the laboratory, he suggested that an experienced chemist or biologist be sent for to determine just what this was all about. "There's something rotten here, you can bet," the newspaperman suggested.

"McWilliams, in the Bureau of Standards, would love to jump on a case like this," the operative mused. "Think I'll give him a call. He can be here in a jiffy from Washington by plane."

It was just a little more than an hour later when McWilliams appeared on the scene. It was explained to him that here was a case he might be able to solve with test-tubes and microscopes. There was something unusual about the place and the peculiarity seemed to lie within the field of the laboratory.

Every member of the biological staff had been told of the tainted currency condition which existed and their efforts were being directed wholly along lines of solving the mysterious activity of germs on the money.

Studying the cultures which were in

the laboratory of the greenhouse and the money, he leaped up suddenly as if mad, proclaiming: "I've found it—I've found it!" Without giving further information, he directed his agent-friend to hold the men in the place until he heard from Washington—that he had rounded up the gang which was threatening the very foundations of the country—far worse than a counterfeiting mob could ever do!

CHAPTER III

The Frequency Machine

A PRE-ARRANGED appointment in a rendezvous on the outskirts of the capital of Moravia between Belin and Porter, took place early in the international complications which ensued following the discovery in the New York City greenhouse. Complications which might have ended tragically had not a man of the character of Belin sat as a member of the Council of Six.

"I called you here today so that I could talk to you alone," Belin began, his eyes suspiciously scanning the walls, windows, and heavy draperies of the single-room cabin in which they met. "My meeting you this way may result in my arrest or death should it ever be learned that I revealed the information which I am about to disclose to you. Further, the fact that you are a confidant may also cost you your life if it is ever found out. Are you willing, knowing this, to listen? That which I shall relate involves your country, but it is not your country in which I am interested—it is the safety and security of millions of people and the happiness of the world that is now in the balance!"

The personal hazard of which he reminded Porter meant nothing compared to the feeling of anticipation which possessed him. He would have suffered a hundred such possibilities to learn more of the inkling of fact which Belin had given him. Porter was a newspaperman and the possibility of a story that might rock the world, permitted little hesitation in an affirmative reply.

Belin got up from the table which held the empty glasses of tea which the pair had just finished, to more closely inspect the room and the exterior of the cabin. Satisfied that he was not being spied upon, he sat down, drew his chair closer to the reporter, and began the story which almost set the world afire!

HE RELATED the plot to infect the currency of the United States; how the "helping hand" act was planned but failed because of the unexpected discovery; how the official recognition of Moravia was seen on the horizon if the scheme matured. And he went a step further into the plot revealing that which, heretofore, was little dreamed.

"A preventative of the disease has been discovered," he told Porter, "the germ-culture plant seized, and the United States is re-manufacturing currency and burning the old rapidly as it can be called in. Moravia realizes that her plan has been a failure, and the source of the diabolical scheme will, no doubt, be learned eventually. When that happens, the greatest war the world has ever seen becomes inevitable. But, peculiarly, I am fearful of it because Moravia is more than prepared for it."

Belin paused a moment. Nervously, he again scanned the room. Porter did not dare interrupt lest he might, by any chance, make Belin reflect upon his revelations and cause a change of heart. Belin continued:

"As much as I love my country and her ideals; as much as I love the Moravian regime and her hopes for the

future, so much more do I love Humanity and the World! A war with Moravia at this time means the end of civilization! It must never come!

"Moravia has one of the finest if not the greatest army and air force in the world today. That is a recognized fact. But her army and air force is merely a display of strength to warn off the attacks of nations who might gladly invade her territory either for the richness of her lands or to eliminate her commercial competition, which is becoming continually more keen. Moravia's armed forces are little more than glorified policemen. It is her scientists who comprise this nation's real army! And these men hold the very existence of civilization within the palms of their hands for in the archives of State lay plans for an apparatus that can wipe out an entire nation in one day! Before even mobilization could occur, the enemy would no longer exist!

"MORAVIA, understand, does not seek the commencement of hostilities. Commerce, growth, and expansion are manifestly more desirable. But the destruction of one or a million or a hundred million lives to save herself is of no consideration if it means her defense. After all, she would be only following the first law of Nature: self preservation at any cost.

"And heed this: if Moravia is called upon to use this recently perfected machine of war, the enemy becomes a country of the Dead! There is no means whereby it is possible to elect who should die—it is indiscriminate millions or no one! If selection were possible, I would not be speaking to you like this today. But the slaughter of a hundred million people—God, that's something that no man could bear to witness unless he were utterly heartless as I *should* be as a member of the Council!

"The germ campaign of Stemenov has meant the lives of more than a half-million people—itself, a sufficient suffering to wreak on any nation. I can peer into the future, Porter! Unless something is done, the opening of hostilities means the end of the world. Porter, I can help *you,* but *you* are the only man who can avert this catastrophe!

"The plans allow for the completion of Moravia's war-machine within one week, if necessary. I know you must be desirous of learning just what this machine is capable of doing, and how it accomplishes its purpose. Let me tell you, briefly, to further impress upon your mind the vital necessity for prompt action.

"In the basement of a large Moravian warehouse are a hundred peculiar-looking machines which, to the layman, appear to be little more than the chassis of ordinary radio sets but which are, in reality, the most effective, the most inhuman machines of death ever devised! A veritable madman, albeit a brilliant scientist, invented it. Within the circle of the few who know of its effectiveness, it is referred to as the Super-X.

"It is a super-frequency machine which is carried into enemy country by a thoroughly perfected automatic-rocket-plane. The rocket, released in Moravian territory, travels with the speed of a bullet, attaining a height of 50 miles at the apex of its parabolic flight.

"The Frequency Machine is then automatically, by pre-determined timing, released, attached to a parachute, and proceeds to sing a fiendish song of death as it descends, for each machine is tuned to the frequency of the human system, rending immediately every nerve in the body! At the height of three miles, the effective range of each machine is approximately 100 square miles, and not a living soul can survive its terrible force. After it reaches the

ground, its effective radius is cut to less than half.

"I WITNESSED the testing of a smaller and less powerful machine with a group of political prisoners as the targets. Only because we were fifty miles from the nearest inhabitant, and we were enclosed in a specially-built lead house in which were lead-glass windows, was it possible to survive its onslaught.

"The poor fellows never knew what struck them. They were little prepared to die. They were told that they were to be put to work on a project and, clad in working clothes, with pick and shovel, the poor unfortunate devils unknowingly marched to their doom. The Super-X was situated in a thicket about three miles away, a remote control station being placed in the lead-sheathed cabin with the witnesses.

"I almost screamed aloud in a hope to halt this killing of men who were guilty of nothing more than being of a different political belief but it would have been of no avail. Bloodlust seems to be a necessary part of the upbuilding of a new government and the witnesses were all anticipating the event with high hopes that the test would prove successful for upon its success hinged the future protection of Moravia.

"The remote control key made contact and through the heavy walls could be heard a faint whistle growing higher and higher in pitch. Looking through the windows, the prisoners momentarily ceased their digging having apparently also heard the peculiar distant whistle. Then the pitch went out of range of hearing and, thinking no more of it, the prisoners resumed their work. This all took place within the space of about two minutes!

"Then the frequency became attuned to that of the human body! Whether it was the fact that a minor amount of the power penetrated the lead walls, or whether it was that which I saw next that caused me to shudder, I cannot tell. But it is a sight that I never want to witness again.

"The prisoners suddenly halted their digging, their faces taking on the most grotesque contortions. Apparently unable to control their nerves or muscles, they clung to the tools in vise-like grips, then, with a sudden stiffening of the arms and legs, eyes bulging, sweat pouring from their racked bodies, they mercifully lost consciousness and toppled to the ground like tin soldiers—stiff—straight—dead!

"Yes, the test was a marvelous success. Everyone crowded around the genius whose twisted mind could conceive such a device, and congratulated him. Moravia was now secure!

"The entire demonstration took but three minutes, and actually but one minute from the time the pitch of the Super-X had passed the range of audibility. Imagine, then, the havoc that could be wrought before a parachute, lowering such a device from a height of three or four miles, reached the ground. Remember, that before the machine is released from the parent rocket, it has already passed the point of audibility and is ready to start its slaughter!

"Porter, need I tell you more? I take my own life in my hands to tell you this, but to save civilization, what does my insignificant existence matter? You must *act!* Obviously, what I have told you is not for publication, for it would precipitate war — and then nothing could be done. You must work quietly and unobserved. You can afford to have no confidant nor confederate. Trust no one but me. I shall not ask for acceptance of the obligation placed upon you —you can't refuse, you mustn't fail!"

Belin looked Porter in the eyes and grasped his hand. Porter had risked his life many times before with much less at stake. What is mere life against that of posterity! He must accomplish a purpose. Together, Porter and Belin discussed a plan.

CHAPTER IV

Two Men Against a Nation

AS an electrical engineer of no mean ability, Porter, now transferred to a new position in the Moravian Bureau of Research, rather enjoyed his new job. Although several years had passed since he last experimented with electrical apparatus, he found no difficulty readjusting himself to an environment which was once so familiar, and soon earned the esteem of his co-workers.

To secure a place in the Bureau had not been difficult with the aid of Belin. Such employment was an important step in their mutual plan to prevent an impending world conflagration. Both Belin and Porter realized that, although the elimination of the weapon possessed by Moravia would not necessarily avert hostilities if the fact became known that the official government was responsible for the plague, it would prevent the wholesale slaughter of innocent people which war refers to as "the enemy."

Belin's activities would have obviously been considered traitorous by his colleagues. But the philosophy that he propounded eliminated such a thought from his own mind, for he often referred to and considered himself "a citizen of the world with headquarters in Moravia." Although not a pacifist, as one is commonly painted, he defended his theory of war by declaring that "while individuals are, to a certain extent, civilized, nations are still barbarous. The individual is peace-loving and will resort to force only as a last resort. But the mob, of which that individual is a part, holds a lust for blood. If government is representative of the citizen as an individual rather than as a group, it also must seek every means to avert hostilities. Nations, like individuals, must no longer be guided by the commonly applied law of the survival of the fittest, for often the 'fittest' is physically the weakest, but mentally the strongest, and for civilization to continue, this must become a world of brain-power, not brawn-power!"

SO Belin continued to lay his plans to save the world and its people. Working with and through Porter, his fight was against Time—against the time when America would—and must—learn of Moravia's activity. Already a finger of suspicion pointed toward the ambitious nation. The men found in the "greenhouse" did some talking, but even telling all they knew of the situation was not sufficient to definitely place the source of the scourge upon the activity of a nation.

Two weeks had elapsed since Porter had entered the Research Bureau, when he received a note in a brief code originated between the two, to meet Belin at "the cabin"—the place where they had originally met that night.

"Much has happened since I last spoke to you," Belin began. The dim cabin light seemed to accentuate the deep lines of care on the diplomat's face. His furrowed brow spoke of many sleepless nights of concern over the possibility of an impending tragedy. He closed his eyes for a moment in a manner which seemed to bespeak a sort of hopelessness in the situation at hand.

"America has charged that Moravia caused the Plague!"

Porter gasped. He expected that, yet it came as a surprise. How could they

have learned? What would happen? Had the discovery been made public? A thousand and one questions crowded into his mind. A momentary pall hung over the two men. It seemed like the beginning of the end. Neither spoke. Porter lit a cigarette and slowly paced the small room, his eyes glued to the rough board floor as if trying to read there a solution to the problem.

Belin looked up. "We must think and act quickly. The future of the world rests on your shoulders.

"The entire situation is, at the moment, being held within a small diplomatic circle in both countries. A request for an explanation has come from Washington and has been answered by a sweeping denial of all allegations. But that will not end the matter. Opinion, when the public learns of Moravia's part, will force war. Furthermore, Moravia, at the present moment, is not at all adverse to hostilities, although but a short time ago she might have seen a distinct disadvantage to such action. There is little doubt that America will first demand that all commercial activity between the two countries cease. The reason must eventually be forthcoming and Moravia will force the issue by being the first to release the diplomatic notes which have been exchanged, to the press. Then it will be merely a matter of days before war will be declared! That is the story in a nutshell."

"But can't something be done—can't YOU do something to avert this catastrophe? Can't I do something—anything?" Porter questioned pleadingly.

BELIN was thinking. Seconds passed that seemed hours. Porter gazed at the man seated opposite him. The very stillness of the place held a foreboding of doom. Without changing his position or even looking up Belin broke the silence:

"Porter, there is hope. War can be averted. A new and better world can come to be. A greater Moravia will hail the future—a future that neither you nor I shall ever see." It was a sort of reverie that Belin began, but he soon launched into the main theme of his plan.

"There is but one possibility—about one chance in a hundred of being successful. I can carry out my end of the plan. If you successfully accomplish yours, the war is 'over' and a new life begins.

"With the declaration of war, a select number of engineers will become part of the regular army. They will then be transferred into a secret division who will carry on the actual warfare through the Super-X. You will be a member of this division.

"There will be only one thing for you to remember—" Belin looked squarely at Porter, his face rigid, his eyes half closed. He spoke slowly—determinedly. "The first rocket containing the high-frequency machines must *never leave the ground!*"

The engineer-reporter seemed to be under a sort of hypnosis. He listened intently, a cigarette held limply between two fingers.

A sharp rap at the door precluded further discussion and brought both men to their feet. "Hide!" Belin commanded, in a tense whisper. Porter swung himself through a tiny trapdoor in the floor. Belin spread several sheets of paper on the table before him, and busily occupied himself with some pretended problem.

"Come in," he called.

THE door swung open admitting a stately, autocratic gentleman, who, in a sarcastic manner, formally introduced himself as "Mitchell Kitman, personal secretary to M. Belin, Com-

missionaire of the Department of State, if it please your Highness."

Belin blanched under the verbal assault. "What are you here for? How did you know I was here?" he demanded.

Kitman calmly removed his gloves and overcoat and carefully placed them on a nearby chair, purposefully accentuating a disdain for his employer. Standing but a few feet from Belin, and towering over his comparatively frail physique, Kitman smiled sneeringly. He felt in perfect command of a perfect situation. Standing with feet apart, the Secretary gazed haughtily at his superior, contempt motivating every feature. He drew a studded case from his pocket, removed a cigarette, lit it, and breathed a heavy inhalation into Belin's face.

"As your personal secretary, Mr. Belin," he finally replied, "it becomes my duty to know where you are at all times. And why these secret meetings with an American newspaperman?"

Belin by this time had recomposed himself. "It seems you take considerable liberties, sir. I repeat, why are you here?"

"To inform you of two things," he answered through a twisted smile. "First, that unless you immediately resign your office by mail, recommending me for your post, and then disappear, a brilliant career might be dragged in the mud. Secondly, to tell you that America declared war an hour ago!"

BELIN was thinking fast. It was a battle of wits and Kitman was no match under ordinary circumstances. But here the secretary held an upper hand.

"Well, Kitman, I guess you win," Belin replied, concealing the excitement which raged within him at the mention of the outbreak of hostilities. "But tell me, who came with you, and who else knows of my meetings?"

"You make a wise decision, Mr. Belin," the secretary advised, "and you may rest assured that no one came with me and no one else knows of your secret meetings with Mr. Porter, nor that your discussions were of a treasonable nature! Incidently," and he addressed his voice to the floor, "Mr. Porter, you may come up from the basement." Saying this he proceeded to open the trapdoor.

Two sharp, staccato shots rang out. Kitman straightened, clutched at his chest, reeled, and fell to the floor. Porter climbed slowly through the trapdoor, automatic in hand, and looked at the inert form.

Looking at the prostrated form of Kitman, Porter turned to Belin. "It was the only thing I could do," he said. "His death can mean life for millions of others." Then disregarding the figure on the floor, he asked, "did he say war was declared?"

Belin nodded slowly, his eyes drawn irresistibly to the body of his secretary. "Yes, it was the only thing to do and, I'm glad you acted promptly. No doubt, I will be asked as to the whereabouts of Kitman and I will have to forestall any inquiry—at least until you have accomplished your mission. It's too bad, though, he had to die."

Belin sighed heavily as if he had lost a bosom friend rather than a potential enemy. "We must get back immediately," he continued. "Not a second must be lost. You will have no further opportunity to see me. I will take care of your transfer and see that you are placed in positions most advantageous for the execution of our plan. We may never meet again, Porter, but our names shall ring together through eternity!"

Filling two glasses of wine, Belin picked one up, "To a greater Moravia—

and a glorious death!"

Porter hesitated a moment—"To a hell of a good story that I'll never write!"—and Porter brought the other glass to his lips.

CHAPTER V

His Land of Opportunity!

WHEN Porter returned to the city, it was different than the one he left only a few hours previous. Loud speakers in the Square blared forth momentous events concerning the declaration of war; of the "impending doom of Capitalism"; of the preparations being made for hostilities; of mobilization, which Porter now knew was merely a sham to hide the activities of preparation for use of the Super-X. The populace was in a frenzy of patriotic hysteria. Everywhere flags were flying, men and women shouting; soapbox orators were addressing throngs on every corner urging the citizen to "now take advantage of the opportunity to save the world for Humanity."

He was not a little bewildered at this sudden change, although he had been appraised of the declaration of war, and he knew—probably better than any man of the thousands in the Square, the lethal meaning of the break between the two countries.

He hailed a shouting newsboy and hurriedly scanned the front page. Thoroughly trained in the working of the Moravian press, he could read between the heavily propaganized lines. Already, in the offing, rumblings of International concern could be heard. England, convinced that America had correctly determined the source of the great plague, had called a meeting of Parliament to consider its own stand in the situation. Germany, through its press, gave indication of taking sides. France was watching the situation with considerable concern. Meanwhile, however, Moravia made public its demands of complete neutrality by surrounding nations and the right to move troops to the far borders of these small nations, "for mutual protection."

The League of Nations through the World Court was already demanding the opening of negotiations, but its cry was like the peep of a bird in a boiler factory. Regal signatures hardly dry on imposing documents which guaranteed to end war, were already fading. The roar of the great Moravian Bear shook the world and mankind saw no alternative but to prepare in defense of home and family against its onslaught.

Little did the world realize the crushing force and unconquerable power that a bare handful of men held ready to loose on the populace of the Earth.

PORTER immediately made his way to his place in the Bureau of Research which now, to all practical purposes, had become the Bureau of War. The flood of propaganda had, even this early in preparations, made its mark on the citizenry. He noticed a certain coolness on the part of his co-workers. Although they knew he had pledged allegiance to Moravia and had become a citizen of that country, Porter recognized the reason for this hatred and change in attitude and inwardly despised them far more fiercely than they did him, for it would be this group who would directly wield the power that might mean the end of his own country—for it *was* his country, *his* America despite the formality of a change in citizenship. But he further realized that if he is to be of any value to his country, he must allow no one to think that his heart was anywhere but in Moravia.

He laughed with his "comrades" when they chided him about his Amer-

ica birth; he scorned, to those surrounding him, the possibility of America ever being able to withstand Moravia's attacks; he lauded Moravianism and drank toasts to the honor of Dictator Michel, and heartily agreed with his fellows that "soon the world will be safe for civilization and progress."

But within, his heart cried out for the vengeance he sought against the government who would wage a war by centering its activity against the women and children, the old and the feeble, the incompetent and the invalid, of the enemy. Yet, what could he do single handed against the will of millions? He trusted Belin implicitly, but even he—as high as he stood in affairs—what could he do to prevent the onslaught which was now only a few days distant at the most? But he held hope—hope that Belin would prove the genius in him.

IN accordance with the military-like custom of the Bureau in which Porter was employed, the workers jumped to rigid attention when a high military officer entered the laboratory. Immaculately attired, a monocle in his right eye, a cigarette held tightly between thin lips which were almost hidden by a small goatee and a carefully trimmed mustache, the uniformed officer stepped to the center of the room, three aides close behind him. The workers relaxed their position when an "at ease" order was given.

"Gentlemen," the officer began, "I shall, until the end of the War, be in command of this group. The battles will be fought and won by you! This group, composed of you gentlemen, is the most important unit of the entire Moravian force. Activities will begin within the next day or two. We should, therefore, get acquainted. My name is Ivan Stemenov!"

Every man in the place had heard of the famous biologist, but it was only Porter's blood that surged at the introduction. Only Porter knew of the fiendish activity that he had carried on in America—that it was he who was the basic cause of the impending war.

The wine was like poison to Porter when he joined the others in a toast to their new commander. The hand that grasped the glass longed to clutch the throat of this man whose praise they were voicing. Yet he played the part well. Somewhere, Ivan Stemenov fitted into the scheme of things and if ever there was to be an opportunity to render retribution, it could only be through the "favor" of the Commander.

Further developments the following day gave indications of rapidly plunging an entire world into the conflagration. The sympathy of democratic Europe was almost entirely with America, while Asiatic countries saw their hope of international prominence in siding with Moravia. Although no further declarations of hostilities had been announced, such action seemed to be well within the realm of the near future.

IT was shortly after Porter had arrived at the Bureau that Stemenov came in. Following a short discourse on how fortunate an individual should consider himself in being a citizen of Moravia he concluded his opening remarks with: "and the most fortunate of all are the engineers engaged in the Bureau of Research for this war shall be a scientific war—swift, destructive and certain!"

He paused to allow the full significance of his statement to be appreciated, then he launched into details, after warning that "this is war and every action must be guarded, every word held in strictest confidence." A few of the men in the room stole furtive

glances toward Porter to see how the imminent unraveling of plans was being taken by one who was to aid in waging destruction against the land of his birth. He feigned enthusiasm admirably. Stemenov continued by telling of the Super-X, its operation and capabilities.

"There is no force great enough to withstand it," he said. "The first projectile-rocket, carrying ten Super-X machines, is scheduled to leave its mark on the enemy at midnight tomorrow. Each machine, released on a parachute at a height of approximately five miles, will kill everything that breathes within a hundred-mile radius! The machines will drop automatically every fifty miles so that the over-lapping will leave a path of death five hundred miles long and one hundred miles wide! The cry of surrender will ring in our ears within 72 hours! The great United States of America will be the United States of Moravian America within one week!

"And now gentlemen, witnessed by every official of our great country, ten men selected from this laboratory, will handle the technicalities and the actual launching of the projectile as well as the timing of the Super-X machines. I know that you all want to take part in this history-making epoch, but my orders are to name ten men only."

He drew a sheet of paper from his pocket on which were indicated the names of scientists who would take part. As each man heard his name he drew to attention. . . . "Hammacher, because of his work with rocket fuels; Partow, because of his methematical genius; Tarlo, because of his electrical developments, and Porter, because he is an American engineer and a good one—who found in Moravia his land of opportunity."

Porter saw Belin's hand in this. He had undoubtedly arranged it. Now, Porter realized, it was squarely up to himself. Just what he could do was not yet clear in his mind, but a faint idea —a hope—was beginning to materialize, to save his country—to avert the slaughter of millions of innocent people. Truly: "Moravia his land of opportunity!" The paradox made his smile.

CHAPTER VI

The Deadly Rocket

THE first grey streaks of dawn lighted the sky over the city as ten engineers boarded two automobiles to be whisked away to a desolate, isolated spot nearly one hundred miles away.

An errand of death beckoned the ten men—an errand upon which they were duty-bound to execute. Clad in regulation army officer's attire, a holiday mood brought laughter and song from within the speeding automobiles. They were on their way to "war"—and they alone were being given the honor of fighting for their country. This was an engineers' war, and they were the engineers! Before their superior officers and every major governmental officer, as well as scientists of note and invited guests of distinction, it would be they who would fire the "shot heard 'round the world."

It would be a gala occasion, this initial shot of the war with America—the war "to save the World for Humanity," as the propaganda mill so aptly put it. And why keep this affair quiet? As far as Moravia was concerned, the war was won almost before it started. This opening demonstration was of a "new mammoth gun which would fire a shell a thousand miles." Except for the Research Bureau, only a very few knew of the capabilities of this diabolical weapon; the others didn't even surmise

that the monster, cannon-like hulk was anything more than a new-type gun, as was "confidentially" explained in the invitations.

The ten engineers were made thoroughly familiar with the mechanics and operation of the projectile and the Super-X machines during the two days previous. Every man had his distinct duty and, aided by a labor crew which was supervised in the erection and placing of the high-frequency mechanism within the rocket, the actual firing of the shot on this bleak, October morning, was a gala occasion. The field would be cleared of everyone except the ten men. They would each inspect the rocket mechanisms and the machines—and Porter would release the firing pin!

PORTER gazed with unseeing eyes at the landscape whizzing past the automobile. The shouts and laughter of his fellow scientists fell on deaf ears—fellow scientists—scientists — so this was science—to kill, to slaughter by millions, to murder, to wipe out a nation in a single sweep. He was no scientist! He was a newspaperman! He loved the world, its people; their trials and tribulations, their gladness and their happiness; and he was riding to prepare their doom . . . to light a fire of death for Millions!

But he dared not show a trace of anything akin to sympathy. No, he must laugh and shout and curse—for this was war—and he was an officer in the army of the Union of Moravia! He held the post of honor, for it would be he who would fire the shot that would cut a path of death across a continent.

The automobile swung into the field. From all directions automobiles were entering the grounds. Thousands would witness the gala event. Fully 100,000 soldiers were present to lend "atmosphere" to the occasion. Lined all around the field, they formed a human fence to keep the milling throng two thousand feet away from the projectile. At a place of vantage was a grandstand in which were seated all the high officials in government and military circles. In another part of the field was the section set aside for the press.

No attempt had been made in the previous two days, to keep secret the fact that a new and powerful weapon would be used in the war against America. In fact, foreign correspondents were aided in sending such news to their papers. It had a definite two-fold effect. First, countries who were in sympathy with America would, for the time being, keep hands off the situation until the new weapon had been demonstrated and then determine whether it was advisable to join in combating the country that owned such a device. Secondly, it would demoralize America. Fear of an unknown weapon which, it was promised, would make itself felt on a certain day and at a certain hour obviously would have its effect upon the enemy.

American secret service operators in Moravia reported the huge gun, but could secure no details concerning it. Rumors ran rife, but no one even remotely guessed what the huge projectile actually meant. One daring secret service agent stole a Moravian plane and, equipped with hand bombs, planned to wreck the contrivance. But he was seen taking to the air and was shot. Thereafter a more stringent guard was thrown around the field and the airports. Incoming planes, from other countries were warned to fly no closer than one hundred miles from the field, to avoid further possibility of bombing.

PORTER stepped out of the car when he reached the field and, with other engineers, was escorted by a mili-

tary unit to pass in review before the officials' stand. He felt as if he were in a dream as he marched past the shouting and flag-waving throngs; the dignified austere salutes of the Commissioners and the military heads.

This was the Moravian army filing past . . . ten men, escorted by a grand display of military strength . . . soldiers who might just as well be made of tin and carry spears instead of rifles for all the good it would be compared to the strength and powers of destruction that lay in the Super-X.

The note of a bugle cut through the chill of the morning air. The applause and cries of the crowd ceased. The soldiers stood at rigid attention. The flag of the Union of Moravia was being raised!

The ceremony was opened. The war had begun: Ivan Stemenov—Colonel Ivan Stemenov—took command of the detachment of engineers and, heading them, marched toward the apparatus while the crowd, in anticipation of the event of the day, cheered wildly. These ten engineers had overnight become the popular idols of all Moravia.

Porter was thinking. Every second now brought his own beloved country closer to annihilation. There was no one who knew, except himself, who believed that there was the slightest possibility of averting that which seemed a certainty: that the projectile would leave the field carrying its cargo of torture and death to America. His life would mean nothing in exchange for the lives of his countrymen. He might not have felt this way if the battle could be on a more equal scale. But the unfairness—the stark cruelty—the inhuman way in which the weapon was to be used—striking at defenseless noncombatants was horrible. And they expected *him* to pull the pin which would send the rocket on its way? They would give *him* the honor because the war was against his country and he had served Moravia so long and so well! He smiled inwardly. He had given them credit for better judgment. But then, it was Belin who was aiding him. It was Belin who placed him in that position of vantage, for if ever an opportunity to act would be presented, he would be given that opportunity at the crucial moment!

GOOD old Belin! It was only he, possibly, who knew what was in Porter's mind, what were Porter's plans. And yet he sat in the Reviewing Stand, calm and of stern visage. Porter tried to discern some visible expression of encouragement on the face of the Diplomat, but he seemed not even to notice him, while all other eyes seemed to be centered upon himself—he, the young American who would fire the shot! Why, it was almost a circus and he the featured performer!

Porter wondered, as he marched across the field toward the projectile, if the crowd realized why they were cheering. Was it really a bloodlust? They weren't marching off to war. This was merely the opening shot. War hysteria is a funny thing, he thought. Would they be cheering if they really knew what would happen after the projectile left the field? The cries and shouts of the mob grew fainter as he neared the apparatus together with the other nine men of the Bureau unit.

And Belin didn't even notice him! That troubled Porter. Had he been merely testing his loyalty, at their rendezvous? No, that couldn't be, for he seemed to approve of the necessary extinction of his secretary when he threatened exposure. Had something gone wrong in his original plans?

Trivialities occupied his mind. Ten men and a commander marching to war! That seemed to have a ludicrous

angle and brought a smile to his lips. And each carried a heavy pistol in a holster at the hip—and the enemy some 4000 miles away! That *was* ridiculous. It reminded him of the times, when he was a little boy, that he played "war" and, equipped with a wooden sword and a paper hat, would march to do battle with an enemy that existed only in his imagination. Perhaps all this ceremony had a moral effect on the populace. Perhaps it was merely the result of a desire on the part of the officials to see a war "done" right. At any rate, the demonstration was "impressive."

STEMENOV, in a stiff, military manner, brought his wrist-watch to the level of his eyes to launch the rocket at the exact pre-determined time. Each man, upon reaching the apparatus, took his post. While one carefully inspected the timing gears, another examined the intricate parts of the rocket launching apparatus. Tarlo was scrutinizing the delicate adjustments on the Super-X machines, Hammacher was looking into the fuel capacities. The few, including Porter, who could do nothing until the time for actual launching of the rocket arrived, and were standing idly nearby.

A sharp call of "attention!" and the ten engineers immediately fell into line. A blast upon a bugle notified the authorities and guests on the distant sidelines, that all was now in readiness. An answering bugle gave the order to "fire when ready."

The detachment of soldiers which accompanied the engineers to the apparatus, returned to the sidelines, leaving only Stemenov and his ten men at the machine. The commander then gave the final orders: "Gentlemen, in a few minutes America will have felt the powerful hand of Moravia. Success is assured. Before the detonation cap is fired, I want to repeat my warning: Remember, it is every man for himself after the cap is fired, for you have only *two* minutes to repair to a safe distance before the searing explosion which will send the rocket on its journey. In *three* minutes after the detonation cap is fired, the Super-X machines start their whine of death preparatory to their release by parachutes over the United States.

"As a precaution, in the event the rocket does not leave the ground, a heavy charge of dynamite located beneath this rocket runway will utterly destroy it before the Super-X has an opportunity to operate on this field. These wires lead to the sidelines where an officer will release the charge if, in ten seconds after two minutes, the rocket is not on its way.

"You gentlemen who have completed inspection, may return to the lines leaving Wilens, Borot, Porter and myself to return after the detonation signal."

Seven men left the field leaving four beneath the shadow of the greatest, the most demonical machine ever created by man.

PORTER was visibly nervous. Once Stemenov noticed his manner, which he mistook for timidity, chided him and reiterated the glory that would be his for having fired the shot which would mean, practically, the immediate surrender of America and the ultimate expansion of Moravia. Porter smiled feebly—the smile of a brave man who might be watching preparations for the cutting out of his own heart!

Only minutes stood between any action that he had planned, and its execution. He must not err. Although he was alone with three men on the field, thousands of binoculars in the sidelines peered upon him through the morning haze. An automobile, engine running and with a chauffeur waiting, stood

nearby to rush the four men to safety after the detonation signal. The low whine of the Super-X machines could now be clearly heard, following the closing of the switches by Wilens and Borot. In three minutes their destruction would begin.

"Fire!" Stemenov ordered.

Porter hesitated.

"Close the detonation switch," Stemenov screamed, dropping his cloak of military austerity to rush over to fulfill the duty which Porter had been assigned. Seconds were precious.

Porter whipped out his revolver, and brandishing it at the three men and the chauffeur in the car, ordered Stemenov to halt, and for all to throw up their hands. Surprise at this turn in events, rather than temerity on the part of the commander, stopped him. Before a word could be uttered, Porter drew a pair of cutters from his pocket and severed the wire which would dynamite the apparatus. Its mere destruction was insignificant compared to a greater purpose he held in his mind.

This latter action on Porter's part galvanized Stemenov into action. Dropping his hands, he made for his pistol. Porter's gun barked twice and the commander crumpled and lay still with a bullet through his head. Again Porter's pistol spoke and the chauffeur slumped at the wheel after an attempt to make for his gun in disregard of the warning to keep his hands up. The other two restored a rigidity to their arms which were held over their heads.

Already a minute had passed. A field telephone was ringing. Porter answered. Was something wrong? Although the haze of early morning made it difficult to discern, it appeared from the sidelines that their activity had ceased—something seemed to be wrong.

Porter, feigning Stemenov's voice, assured the questioner that everything was all right, but that a minor adjustment necessitated two more minutes of time. Apparently satisfied, the field officer broke the circuit.

WILENS AND BOROT hesitated to make a concerted leap upon Porter. To face the gun of their antagonist was a certainty of death; the everwhine of the Super-X machines presented only a possibility, as far as they knew. According to calculations, only a little more than a minute was left.

"For God's sake, throw the switch," the two pleaded. "You'll wipe out everyone within fifty miles in the next minute! It's murder, Porter, it's murder!"

Porter only smiled. He glanced at his watch. Just fifty seconds more. What a war! One man and one gun. The eerie whine of the Super-X machines had now reached a point of inaudibility. What a joke! Truly, Moravia *was* his land of opportunity!

The field phone was ringing. Let it ring! Two engineers were pleading. Let them plead! A distant band was playing. Let it play! Soon all would be still—quiet—peacefully silent.

Twenty seconds more. Wilens and Borot suddenly dropped their hands. Each held a revolver. But Porter was faster. His gun spat twice. Wilens clutched his breast and toppled. Borot returned the fire before another shot finished him, and caught Porter beneath the heart.

THE shots and action as seen through the binoculars started motorcycles speeding toward the apparatus. Porter propped himself against the steel base of the rocket-cradle. With a blood-soaked handkerchief he made a feeble attempt to stem the flow from a fatal wound. He smiled as he watched the

distant motorcycles make a futile race against Time and Death. In five seconds, the Super-Frequency would have been reached. Two motorcycles reached the scene; others were following. No one thought to fire the rocket before the all-destroying frequency became effective. The soldiers were, after all, unfamiliar with the meaning of the high-pitched whistle which had been heard on the sidelines and now, being inaudible, was not considered.

Questions of what had happened were being directed to Porter until one of the engineers arrived in a side car and called to "fire the rocket!"

As he called, he fitted action to words and leaped toward the firing pin. Porter laboriously lifted his revolver and fired again. The engineer, with a cry of "traitor!" returned the fire, but the bullet in his abdomen sent the return shot wild.

A strange prickling sensation ran through his body. The soldiers, who rushed to the aid of the engineer and to Porter, also felt it. Then, with a startling suddenness, the sensation became painful. The soldiers, unaware of anything untoward, dropped their guns and began rubbing their bodies. The thousands on the field were also feeling the effects of the frequency.

But Porter knew. He laughed aloud as he watched the first effects of the Super-X. It was with difficulty that he forced his mind to retain consciousness for the remaining brief seconds to witness the successful conclusion of his plan. Then, like the searing of a knife through muscle, the full force of the frequency came into play.

Porter smiled. A twisted pain-racked smile. He stiffened as the frequency tore at the nerve fibers; the agonizing death proposed for a nation.

AN extract from the New York Times one year later can best complete this story:

"Washington, D C., April 16. A national holiday has been declared May 5 by Presidential Proclamation, in tribute to the memory of Millard Belin and William F. Porter, when a statue will be unveiled here to their honor.

"An imposing list of dignitaries will take part in the ceremony, including diplomatic representatives of the Republic of Moravia, who will unveil the monument. . . ."

THE END

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☆ ☆ ☆
☆

The Deadly

"God! The slime is ***climbing*** the table . . . it reaches out . . . clutches at me. . . ."

Slime

By Frederic Arnold Kummer, Jr.

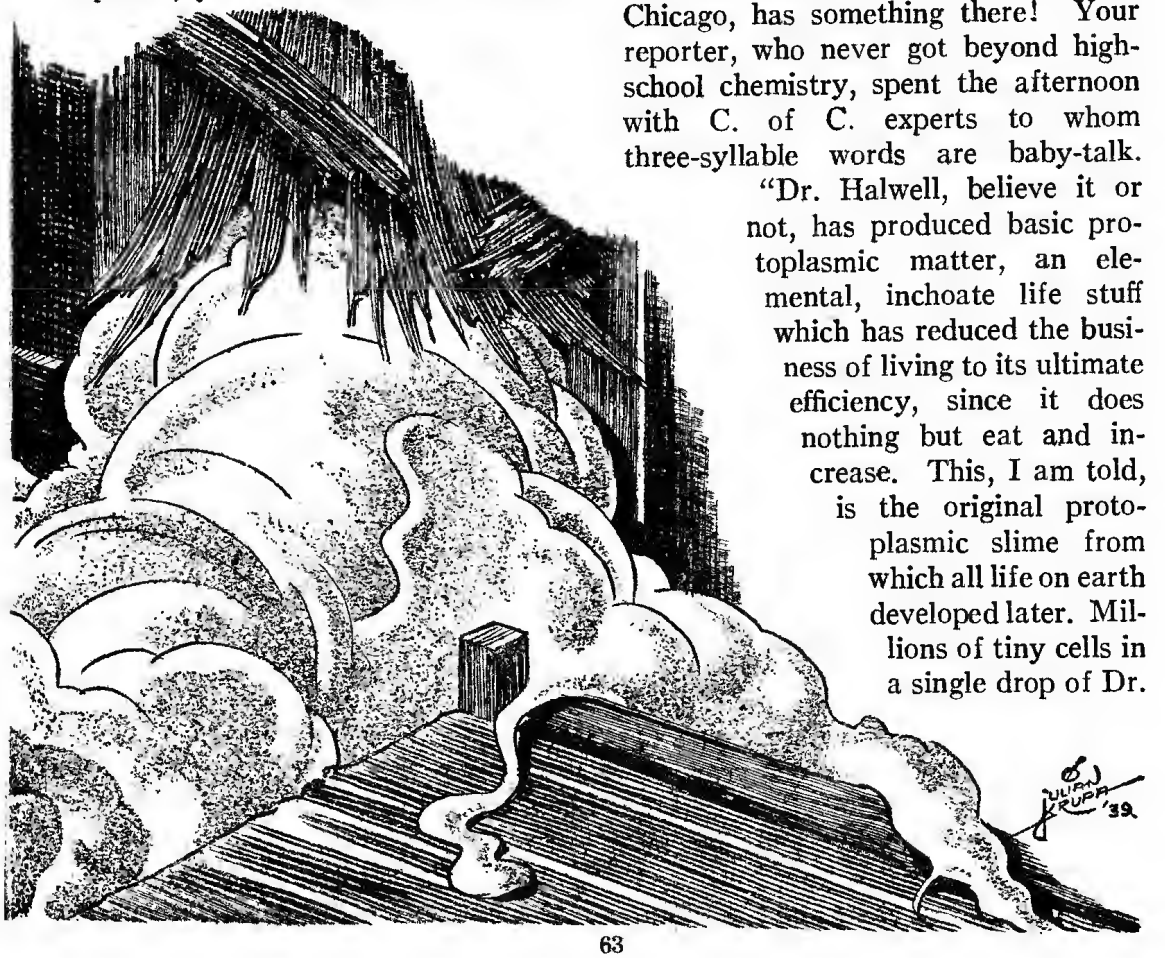
CHAPTER I
The Coming of the Slime

Dr. Robert Halwell loosed upon the earth a deadly flood that could not be stopped, unless . . .

"LADIES and gentlemen. The makers of Wilson's milk of magnesia, that smooth, quick-acting relief for acidity and annoying stomach disorders, bring you Bernie Ballister, the Winchell of the west, with up-to-the-minute news flashes from all over the world and inside information on the headlines of tomorrow. Here he is, ladies and gentlemen, Wilson's radio reporter, your low-down on the high-ups, the one and only Bernie Ballister! Take it away, Bernie!"

"Good evening, world! This is your midwest minute man, raring to go with a redhot scoop for arm-chair scientists here and abroad. Dr. Robert T. Halwell, white-haired, near-sighted, reclusian professor of biology at College of Chicago, has something there! Your reporter, who never got beyond high-school chemistry, spent the afternoon with C. of C. experts to whom three-syllable words are baby-talk.

"Dr. Halwell, believe it or not, has produced basic protoplasmic matter, an elemental, inchoate life stuff which has reduced the business of living to its ultimate efficiency, since it does nothing but eat and increase. This, I am told, is the original protoplasmic slime from which all life on earth developed later. Millions of tiny cells in a single drop of Dr.



Halwell's brain child, each drop capable of absorbing its weight in living tissue, animal or vegetable.

"Translating the C. of C. brain-trusters' high-brow patter, it seems that they have come about as close to basic unicellular life as is possible to obtain. The show they put on for me was worse than a hangover without good old Wilson's m. of m.—pink elephants seem like pets after Dr. Halwell's pureé of protoplasm."

"First the savants filled a copper bowl with odds and ends . . . flowers, twigs, bits of meat, or what'll *you* have, and then, opening a test-tube, placed one drop of their sticky gray slime in the bowl. What happened next would make the Wells boys . . . Orson and H. G. . . . green with envy.

"Before your pop-eyed reporter could finish one cigarette the drop had doubled in size and completely absorbed a blade of grass. In half an hour it was big as a baseball and in another twenty minutes the blob of protoplasm was the size of a man's head, had completely devoured everything in the bowl, and was rearing itself in determined little waves as though trying to escape from the bowl, keep on eating and growing. Just the thing to give your mother-in-law next Christmas!

"HALWELL explains his protoplasm by reference to Carrel's celebrated chicken heart and Dr. Philip R. White's cell culture from a growth on a tobacco plant. Dr. White's culture, the nearest thing to this new protoplasmic organism, was capable, given sufficient nutriment, of increasing ten quintillions in forty weeks, of equalling the size of 400,000 solar systems in one year. A healthy little rascal!

"Dr. Halwell's pride and joy increases at an even greater rate and where the chicken heart and the White culture need to be pampered with tasty tid-bits of yeast and broth, young Proto's insatiable appetite knows no bounds. Quite impartial toward vegetable and animal matter, he just keeps on eating . . . and growing. Specimens of the new protoplasmic prodigy have been forwarded to California by airmail for tests in Professor Alexander Goetz's cyrogenic laboratory to determine the culture's reaction to suspended animation experiments by freezing. All in all it seems that our home-town boys are sneaking up on ye good old secret of life. The stork may yet yield to the test-tube and your correspondent be forced to consult laboratory technicians on the season's crop of blessed events.

"So much for today's science lesson. Professor Dick Donelli, Wilson's own scientist of swing, is champing at the bit. Listen, while he and the boys bring you that madness in melody, that insanity of the ether, 'Lunatics' Lullaby'! As the first sot said to his parched companion, 'I'll be back in a flash with a flask!' Play, maestro! And don't . . .

"Wait a minute, Dick! Here's one that just came in! Flash! San Francisco, California. Interstate Airlines have announced that the Commander, their crack luxury liner, is six hours overdue from Chicago. Fears are expressed that the big stratoship, carrying twelve passengers and a crew of five, may have crashed. Last reports from her radio spoke of encountering severe storms over the Rockies. Interstate officials, however, point out that a forced landing, damaging the liner's radio, may not necessarily be fatal. Rescue planes and forest rangers are already engaged in the search for the missing ship. And now, the 'Lunatics' Lullaby'! Music, maestro!"

"CALLING W3XE. W6QNE calling W3XE! That you, W3XE?

How's everything tonight? The new condenser working okay? Well, maybe you need more wattage. Still, you sound clearer. Things have really been humming up here on Wind River Peak since the plane crash ten days ago. Before then I was about the loneliest trapper in these parts . . . except for my radio pals . . . but since the Commander was lost there've been planes droning overhead day and night, foot parties floundering around in the brush, raising all kinds of a fuss. Hope they don't scare the game away. The trapping season starts in two months and from then on I'll be plenty busy. You fellows'll have to sling the ham by yourself till the season's over but I'll be back on the amateur circuit by spring and hope to make enough out of the furs to buy that new Johnson hook-up.

"Stand by a minute, W3XE. I'm hetrodyning* something fierce. It's that mixer tube again. I'll switch . . . there, that's better. Well, as I was saying, I saw that new Johnson in Lander yesterday when I went in for supplies It's a honey.

"There was a lot of excitement in Lander, too. Guess you read about it in the papers. One of the rangers searching for the Commander stumbled into town, half-nuts. I saw him close up and he looked awful. Clothes torn, bruised, dirty . . . a wreck. I've seen city fellows go to pieces like that in the woods, but never a ranger. Funny, isn't it? Kept muttering about 'the slime'! Lord knows what he meant by that. And when they asked him about Curtis, the other ranger who was with him, this guy just broke down. Shuddering, gibbering . . . plumb nuts. The doctor gabe him a shot of dope, and took him to the hospital. I'd like to know just what happened to him and his buddy . . .

"Wait a minute, W3XE! Well . . . I'll be damned! Say, the Rockies must be haunted! There's a stampede tearing by my shack . . . jackrabbits, deer, squirrels, chipmunks. Just like they run before a forest fire. I'm standing in the doorway, now, and can see 'em plain! A little honey-bear just ran down the slope not a hundred yards away. Mamma bear and the cubs are right behind him, their tongues hanging out. There's a big rattler, too. The woods are full of animals. If this doesn't beat the Dutch!

"No sign of a fire, either. The night is clear and not a trace of a glare. A forest fire'd be lighting up the sky for miles around. Whatever panicked the game must be close, though, from the way they're running. Stand by a minute W3XE! I'm going to splice in an extension on my mike. I've got a twenty-foot piece of wire here and soon as I get it in I'll be able to take the mike outside with me. This is something big! Stand by . . . I won't be five minutes!

"ALL right, W3XE! Am I coming through okay? Right! Well, while I've been working on the extension, things have quieted down. Not much in the way of stampeding game, though I did hear a crashing down the slope that must have been made by a grizzly or a bull moose. Right now it's like the strip just in front of a forest fire, a sort of no man's land. Well, here we go outside with the mike, W3XE.

"Now you're on the slopes of Wind River Peak. Big trees, fir and pine, heavy underbrush. The shack's to my right and I'm looking up the mountain. Wild country, no roads or trails, and thirty tough miles to Lander. Whatever it was that stampeded those ani-

* A heterodyne is a high-pitched whistle caused by various conditions, in this case obviously by the mixer tube in question being out of phase.—Ed.

mals ought to be coming along soon. I'm wearing my forty-five, just in case. Kinda creepy out, tonight. The moonlight's pale and shimmery and . . . God Almighty!

"Listen, fellow, there's something coming through the trees. Something I've never seen the like of. It looks . . . well, it looks like pictures I've seen of molten lava. It's oozing down the slope, pretty fast, in and out among the trees. This isn't a gag! And I'm not nuts!

"Listen, the stuff is a thick grayish slime, about a foot deep . . . the line of it stretches off to each side until I lose sight of it among the trees. It's a flood . . . a flood of this gray, greasy stuff! No wonder the game hereabouts stampeded! Still, I don't see what harm the ooze can do. It isn't hurting the trees . . . not right away, anyhow. Weeds and underbrush, though, are sort of sucked down, disappear into the slop! Don't like the looks of that. Gosh! If this isn't a nightmare . . .!

"The slime is about twenty yards up the slope from me. It's glistening in the moonlight as it oozes down toward the shack. Just as though somebody had poured a big dipper of gray molasses on the top of the mountain and it was trickling down the sides. The stuff divides at trees and the two blobs join again on the other side. A bunch of holly bushes were just dragged down, went under. I can hear a crashing of trees further up the slope. Maybe the stuff gets through them after all, in time. But that's nonsense. What could this slime do . . .

"God! Call me crazy if you want, W3XE! I . . . I . . . A big timber wolf just came loping up the slope! Mad with fear! Passed within six feet of me! Splashed into that slime before he could stop! Up to his belly in it! Then . . . then . . . it ran up his flanks! Legs seemed to disappear! God, how he howled! Went under and the stuff flowed over him! Just a couple of smothered yelps and . . . and the ooze turned pink where he went under! And's he gone . . . vanished nothing left! That must have been what happened to the other forest ranger . . . and drove his buddy screwy! I'm leaving now, while I can! W6QNE signing off!"

"CQ! CQ! CQ! You still there, W3XE? Listen, this is W6QNE! You . . . you've got to get me help! I know now why that timber wolf ran *up* the slope! My shack is surrounded by the slime! The grade's steeper on each side of me and two streams of the stuff have met below the shack, cutting me off! I'm on an island in a sea of the gray slime! Unless I get help.

"I've locked the door of the shack, stuffed rags under it. Not that I expect it to do much good. Kinda makes you sick to look out the window. Acres of the stuff, far as I can see, livid-like in the moonlight. Reminds you of dirty snow, except that it's greasy, restless. Keeps tossing, writhing, splashing against the walls. It's alive. I know that. Life such as I never want to see again. I . . ."

"It's coming, W3XE! A trickle of the stuff, seeping through a crack in the floor! More and more of it! Other cracks, other threads of it growing into gray puddles! Converging toward me! Is it coincidence . . . or can the slime sense food? Seems to like vegetable or animal matter equally. Only a foot away, now. No second story in this shack. . . . I'm climbing up here on the table where my radio equipment is placed. Safe for the moment. No way to attack the stuff. Bullets can't hurt billions of cells. That's what it is, I'm sure. Protoplasmic cells, maybe. Hell,

I'm no scientist. Whatever it is, it's hungry. . . ."

"God Almighty! The stuff is trying to climb the table legs! It's thick, like a paste, and able to rear itself up in waves! Splashing higher and higher! In another minute it'll. . . . Wave of it . . . oozing over table-top. . . . On arm . . . Oh . . . God. . . . !"

"W6QNE! W6QNE! Where are you! W3XE calling W6QNE. . . . W3XE calling W6QNE! W6QNE! W6QNE!"

CHAPTER II

Liquid Horror

"THERE can be no comparison between this fearless leader, this man who has devoted his entire life to the welfare of the people, this champion of social and economic reform, there seems no comparison, I say, between this valiant warrior and the opposition candidate whose sole claim to fame rests in his ability to. . . ."

"Ladies and gentlemen, we interrupt Senator Shuttleworth's address to bring you further news of the disaster in Wyoming. Of the entire population of Lander, less than four hundred persons are known to have survived. Sweeping down from the mountain slopes with silent deadliness, the grey slime invaded the town in the dead of night, devouring all vegetation, all living matter of every type. It is, scientists believe, a form of protoplasm.

"Eyewitnesses report the scene to have been horrible beyond imagination. Huge waves of the viscous fluid, splashing as high as rooftops, penetrated cracks, no matter how tiny, trickled across floors toward fear-stricken householders and brought them horrible death. Moreover, it is reported that the jelly-like slime is able to climb in tiny streams over walls, up the sides of buildings, thus reaching those who seek safety in heights above its normal level. This is made possible by the fluid's extreme stickiness, which enables it to cling to perpendicular surfaces.

"Today Lander is marked by only a cluster of roofs projecting above the vast expanse of grey slime. The area about the town is still red-tinted from the blood of human and animal life devoured in the attack. Trees, wheat fields, flower gardens, all living matter, have been assimilated by the voracious cellular culture. The growth of the thing is startling . . . it doubles itself in size by at least a hundred percent per day. At last reports the protoplasmic monster was circular in shape, some three feet deep, and ten miles in diameter.

"From Washington we learn that the President has proclaimed a state of national emergency and regular army units are en route to Wyoming. Evacuation of the area about the great growth is being expedited. From abroad come rumors that the League of Nations is considering a universal suspension of trade with the United States, fearing that the protoplasmic culture may be transmitted. . . . Just a moment, please! (Did you get him, Ed? Right. Okay.) Ladies and gentlemen, our mobile units have contacted Dr. Robert T. Halwell, world renowned authority on unicellular organisms, and have prevailed upon him to say a few words in reference to the Wyoming cataclysm. We take you now to the College of Chicago!"

"SPEAKING to you from the biology laboratory of the College of Chicago. We are in the immense workshop of the biology department, surrounded by scientific equipment, watching the score or so of technicians as

they peer into microscopes, test endless vials of culture. The supervisor of these experiments is, of course, Dr. Robert T. Halwell, whose work is too well-known to require an introduction. It is our pleasure to present Dr. Halwell!"

"Er . . . This is a critical moment in the existence of mankind. The unicellular organism responsible for the Wyoming disasters is, I feel certain, the same as that cell culture developed in this laboratory some weeks ago. At that time we discovered an elemental, inchoate life stuff of the most primitive order yet recorded, and sent specimens of it, via air-mail, to California for cyrogenic tests.

"If these vials of culture were aboard the missing Commander, and if, as is believed, the air-liner crashed on Wind River Peak, then the origin of the Wyoming debacle is clear. Our packages torn open in the crash, the culture spilled from broken bottles. No doubt the bodies of the crash victims furnished its first nourishment after which it would have been sufficiently enlarged to absorb surrounding flora, spread to its present proportions.

"If these assumptions are correct, and the Wyoming protoplasmic growth is our own culture greatly enlarged, the danger cannot be overemphasized.

"With most such cellular growth, special feeding is required, but ours, of a more hardy nature, consumes all living matter. It has, of course, no reason, any more than a yeast cell has reason. The only functions of the cells are assimilating nourishment and dividing into two new cells. It is this rate of expansion that makes it so dangerous.

"As an example, let us assume that the growth were to find sufficient food to keep it for two years. If such were possible, which of course it is not, the growth would fill all space in known creation, including every galaxy and distant star. You can see from such an illustration that within a few weeks, unless its destruction is accomplished, our continent, perhaps the entire world, will be engulfed, all living matter consumed. Only then would the growth die . . . of starvation.

"As for means of destroying the protoplasmic organism, there are many, all impractical in view of its enormous and increasing size. Cold, for instance . . . but to freeze an area of eighty or a hundred square miles is obviously impossible. If this were only winter. . . . Acid also, would be efficacious. But by the time sufficient acid were collected, the growth would have expanded to cover all America. Other means seem equally futile.

"However, we here, as well as scientists the world over, are working to discover a way to overcome this dreadful menace, this Frankenstein of our own laboratories. Time is short . . . we have only a few weeks before North America must inevitably be engulfed . . . but God willing we will succeed in our efforts! Thank you! Good night!"

"LADIES and gentlemen, A. B. C. has brought you a special broadcast by Dr. R. T. Halwell, professor of biology at the College of Chicago. We now return you to our studio."

". . . the people of our great and glorious country! I thank you!"

"Thank you, Senator Shuttleworth. You have been listening to an address by the honorable George T. Shuttleworth, United States Senator from Illinois who has spoken to you on 'Leadership and the Nation.' Political views expressed over these stations do not necessarily reflect the policies of the American Broadcasting Company but are part of our program to give you complete coverage of national issues.

"And now, ladies and gentlemen, in pursuance of our policy of bringing you news of vital importance, we take you to Wyoming, near the stricken town of Lander, where Charles R. Kammerman, A. B. C.'s ace commentator, will bring you another of his graphic eye-witness pictures of the protoplasmic menace which threatens the existence of our nation. We wish to extend our thanks to A. J. Cohn and Company, makers of Mystic Mascara, whose courtesy in relinquishing radio time makes this broadcast possible. The next voice you will hear will be that of Charles R. Kammerman."

"GOOD afternoon, everyone. This is Charles R. Kammerman, speaking to you from an A. B. C. autogiro high above the slime-engulfed areas of central Wyoming. Below our plane a gripping and awful spectacle is visible. One week ago this was a typical section of plateau country . . . rocky, hilly, dotted with farms and villages. Today . . . how can one describe it?

"Never before on earth has such a sight been seen. A writhing, twisting sea of protoplasmic life, spreading with inexorable speed. Trees, vegetation, crops of wheat and rye . . . all have disappeared as the hungry cells devour living matter. Eat and divide . . . eat and divide, they know no other rule. Incalculable numbers of cells, united to form this swirling sea of slime. Those on the outskirts, hungrily absorbing all in their path until swept back into the center of the mass as others push by them to the feeding ground on the edges. They move, of course, by undulation.

"Here and there above the grey mass, battered houses, barns and silos are visible, many of them knocked aslant by the waves of life stuff. The surface of the cellular flood is dotted with timber, paper, rags of cloth . . . all inamimate things which it cannot assimilate. About the edges of the grey slime I can see tiny dots . . . people. Crowds of curiosity seekers, reporters, scientists, all kept back by national guardsmen. Trucks are busy evacuating refugees from villages about the grey sea.

"I have just spoken to my pilot and he has agreed to bring the gyro down to enable me to give you a closer picture of this disaster. We are going down. A thousand feet, five hundred . . . all right, Dave!

"We are now hovering above the edge of the engulfed area. It is fantastic, incredible. To me the slime seems more than just a grey jelly. There is about it a sentient, evil life. One might almost say an air of relentlessness, of overpowering determination. The fringe of spectators in front of it are constantly moving back as the grey tide surges forward.

"The slime immediately below me is rolling into a field of bright green wheat. As it advances, we can see the stalks project for a few moments above the stuff, then melt into it as the grey wave takes on a greenish hue. Trees remain standing longer, but sooner or later topple into the viscid fluid, their trunks eaten through.

"OVER on our right, a stream of the slime has extended into a small brook. It seems to welcome the water rather than dislike it. Almost before you can realize it, the stream is sucked dry, covered completely. Beyond the stream lies a farmhouse. I can see a man and woman loading furniture onto a truck. Now several national guardsmen are motioning to them to leave. The grey flood is coming nearer. The man climbs aboard the truck. The woman seems to be crying. She has a

child's doll in her hand. Now the truck drives off. The national guardsmen move backwards as the slime sweeps toward the house. I . . .

"One of the militiamen has slipped, fallen down! Before he can scramble to his feet a grey ribbon writhes toward him! Like a snake! It touches his hand, grows! He's trying to brush it off! Grey spots on his neck, his head! Now . . . Good God! A shapeless figure, covered with slime! He's down! More streams of protoplasm! A khaki uniform floating on a pool of red jelly! Horrible! I . . . I . . .

"What's that? Okay, Major Earle! Right! Right! Ladies and gentlemen, I have just been informed via short wave that a fleet of a thousand army bombers is about to attack the protoplasmic sea. We will be obliged to retire a mile or so from the edge of the grey slime but from our aerial post we will be able to bring you a word picture of the attack. God grant that it is successful!

"All right. We're heading away from the slime area now. We . . . Here come the army planes! They're flying low, in close formation. It's a staggering sight. The sky is dark with them . . . heavy b o m b e r s , light bombers, attack planes. They blanket the entire sea of slime. No doubt you can hear the tremendous roar set up by their motors. Now they're diving . . . black objects falling. F l a s h . . . s m o k e . . . inferno. . . . S t e a d y , Dave! For God's sake turn . . . ! Ah!

"LADIES and gentlemen, the attack is ended! No need for me to describe the noise. Even without radios it must have been heard for miles. Up here we were tossed about like a canoe in a hurricane. Thought for a moment we were gone. Shock after shock, deafening, as two million pounds of high explosive churned up the protoplasm. The whole area is blanketed with smoke. As soon as it blows away. . . .

"Good Lord! I . . . I . . . I don't know how to describe it. First of all the attack has failed. Definitely. The cells are still horribly alive, unharmed by the concussion. As well bomb Lake Michigan. But . . . it was the force of the explosion, I'm sure! The grey slime has almost doubled its area! Where we were several miles from its fringes a moment ago; we are now well over it.

"The explosions of the bombs have flung it outward in an opaque tidal wave, to engulf spectators, refugees, guardsmen, all those who surrounded it. The sight is ghastly. Struggling figures covered with the sticky fluid, disappear one by one. Great red patches in the grey. Blobs of it, hurled out onto trees, fields, are growing rapidly and must soon meet the parent body.

"As far as we can see in all directions there is only the glistening expanse of slime. It must be all of five hundred square miles in area. Below, the work of destruction goes on. I can see a child, perched on a roof-top. Streams of slime oozing up the slanting roof. The boy is crying, waving to us to help him. We can do nothing! Grey tentacles creeping higher.

"Nothing we can do!

"My God, doesn't he realize we're helpless! If only he'd stop waving to us! We're helpless, don't you see, kid! *Helpless!* HELPL . . ."

"LADIES and gentlemen, you have been listening to Charley R. Kammerman bringing you an eyewitness account of the Wyoming disaster. We have several bulletins just received.

"Washington. All government agen-

cies have been enlisted in the fight against protoplasm, the nation's resources marshaled for evacuation and measures designed to check the cellular growth.

"Chicago. Dr. R. T. Halwell of the College of Chicago has made tests with specimens of the culture and finds that it can float on sea water, drawing sustenance from marine life. Thus the entire world may be menaced should the so-called 'slime' reach the ocean. Scientists of other nations, aware of their peril, are joining in the struggle. Dr. Halwell is still under police protection to guard against attacks by grief-stricken persons who blame him for this cataclysm.

"These bulletins have come to you from the Press Radio Bureau. For further details read your local paper.

"It is now our pleasure to present the Canterbury String Quartet. As bulletins come in, however, we will interrupt regularly scheduled programs to keep you informed of events in the west. The Canterbury String Quartet's first selection will be excerpts from 'The Afternoon of a Faun' by Debussy. This work best exemplifies the great French composer's skillful use of the flutes. . . ."

CHAPTER III

A Hopeless Battle

"GOOD evening, everybody. We are speaking to you from central Wyoming, near the edge of the sea of slime. On all sides busy men, thousands of them, are preparing for what may be mankind's last effort against the destructive, voracious cells. Already the slime area covers some ten thousands square miles, or nearly one tenth of the total area of Wyoming. At its terrifying rate of increase the growth, unless checked, will inside of a week cover all of the western states. Already some twenty-five thousand persons have lost their lives, thousands more are homeless, and property damage, crop destruction are well-nigh incalculable.

"Here, tonight we are standing two miles from the on-coming sea of slime. It glistens lividly in the light of our great arcs. Between this point and the edge of the protoplasmic growth heavy oil trucks are grinding back and forth, spraying the ground, the trees, the houses, with highly inflammable naphtha and gasoline compounds. A belt half a mile wide is being created, stretching for hundreds of miles to completely encircle the cellular culture.

"It is our hope that when ignited it will check the advance of the protoplasm or at least create a barren stretch to starve it to death. All oil companies of the nation have united in this vast effort, donating millions of gallons of oil to create this fire belt.

"Over to my left I see Charles B. Stromberg, president of Columbia Oil, talking to Dr. Halwell, discoverer of the protoplasmic culture. Dr. Halwell looks very tired. Although it is not generally known, he suffers from cancer of the stomach and his ailment, coupled with days of unremitting toil, have taken a fearful toll. I'll see if I can get him to say a few words to us.

"Dr Halwell! Just a word! Thanks! Here we are! Ladies and gentlemen, Dr. Robert Halwell!"

"MY friends, there is little I can say. You and I both know the rate of increase of such growths. This is our final effort. If the ring of fire does not check it, there is no hope. It has been a tremendous undertaking to encircle ten thousand square miles with inflammable substances. There will be

no chance to do so again. Within two days, half a million square miles will be destroyed. I pray that . . . Yes, Major! Coming!"

"That was Dr. Halwell speaking. He has been called away by Major Earle, army engineer supervising operations. I think . . . I think they are about ready to ignite the oil. The slime is quite near the fire belt, now. Yes! Major Earle is speaking into a short wave set notifying the other units at the various points about the protoplasm. It's coming, now! Dr. Halwell is bending down to light the magnesium flare. He's striking the match! His hands tremble. White fire is racing along the train to the pools of oil beyond. In another minute. . . .

"What a stupendous spectacle! As if by magic a roaring wall of flame has sprung into being about the sea of slime! Even here, half a mile away, the heat is terrific! The great searchlights are dimmed by the glare and the writhing stretches of protoplasm glow with a ruddy reflection! Miles of it, a gargantuan ring of fire leaping toward the sky!

"The on-coming cellular growth is close now. Streams of it are touching the flames, hissing. There's a curious acrid smell in the air and columns of white smoke. The protoplasm is coming on in great waves, meeting instant destruction as it encounters that terrible heat. It's swirling about like a beast at bay! We've won! It can't get through! Mankind saved! The fluid can't . . .

"Wait a moment! No! It's impossible! But . . . But . . . ! The fire is beginning to die down! The waves of f l u i d are smothering the flames! Slowly, relentlessly, but inexorably. Tons of the stuff, hundreds, thousands of tons, are being destroyed by the flames but it keeps on coming! Smothering the blazing oil! The slime is halfway across the belt of fire now. The crews here are trying to pump more oil on the flames but it's useless.

"Dr. Halwell and Major Earle are standing there watching. The doctor looks like a living death's head. This seems to be the end for humanity. The last little strip of flame is hissing out now. No time to make another effort like this; the grey sea of slime will be too big before it can be attempted. Unless a miracle occurs the world is doomed!

"I'm moving the mike nearer to Dr. Halwell and Major Earle. They look like men condemned. They are. We, all humanity, are faced with death. Major Earle is staring fixedly at the advancing wave of grey liquid, chewing at the stem of an unlit pipe. Dr. Halwell is writing furiously in a small notebook. Notes, perhaps. Little hope in research, I'm afraid. Time is too short. We . . . Stand by for just a moment, please.

"Yes. Yes. But . . . As you wish, sir. Ladies and gentlemen, Dr. Halwell has just placed in my personal care his sealed notebook with instructions that it be opened forty-eight hours hence. I do not know what he means by that. Now he is walking toward the sea of protoplasm. Can he . . . ? Dr. Halwell! *Dr. Halwell!* Stop him, somebody! He going to . . . !

"SEVERAL of the crew here are rushing down to stop him. They . . . no, he's started to run! Good God! He . . . he's committing s u i c i d e ! Throwing himself into the slime! I can see him clearly in the floodlights. Head and shoulders alone visible! Grey growths . . . a struggle! He's gone!

"So Dr. Halwell, whose genius unwittingly inflicted the world with this curse, has ended his life. Grief-stricken

by the thought of the misery he had caused, he felt he could not see the holocaust of which he was the author. May his soul rest in peace!

"The men employed in creating the ring of fire are retreating. In a moment we must sign off to remove our equipment from the path of the advancing torrent of protoplasm. You have heard what may be man's last effort to check the tide of cell life, heard its failure. The attitude here is one of hopelessness. From now on we must pray for divine intervention to save us from being destroyed by the deadly primal life. This brings to a close our broadcast from Wyoming. Charles Hansen speaking. We now return you to Chicago."

CHAPTER IV

Why Did Halwell Commit Suicide?

"WHEN you hear the musical note it will be exactly 8:15 P. M. Central Standard Time. 8:15! We now bring you the latest bulletins on the protoplasmic growth. Since the futile ring of fire attempt Friday night, the slime area has increased to vast proportions, including parts of Idaho, Utah, and Colorado. Refugees are crowding eastward and already food shortage is felt. No means have yet been found for halting the cell growth. Experts estimate the entire United States will be covered within two weeks.

"Flight to other portions of the globe continues. Nothing can stop the increase of the cells. Mass hysteria reigns. Mobs, violence, looting are prevalent. Throughout the nation industry is at a standstill and many persons are turning to unbridled license, others to religious consolation. Suicides increase as the fate of humanity becomes more and more evident. The national Emergency Council begs that we restrain such emotional outbreaks and carry on with our daily tasks. Order must be maintained while we carry on the fight, futile as it may seem.

"In accordance with this request A. B. C. continues with its regularly scheduled programs and hopes they may serve to keep your mind from the impending disaster. We now bring you episode forty-three of "Jim and Joan," sent to you through the courtesy of Noxcol, that speedy relief for colds and coughs. Jim, you will remember, was talking to Joan on Ma Weston's front porch. . . .

"Ladies and gentlemen, we interrupt all programs to take you to Salt Lake City. Startling developments have occurred in the protoplasmic inundation which may be of importance to all humanity. Take it away, Salt Lake City!"

"CHARLES HANSEN speaking to you from Salt Lake City. We are standing on the outskirts of the city, on a slight rise of ground overlooking the interminable grey stretches of slime, glistening in the light of floodlights. Behind us they are still evacuating the state capital, rows of trucks rumbling through the streets with loads of goods of every sort. In the direction of the mighty mass of cells, however, lies hope.

"With breath-taking suddenness strange growths have appeared on the sea of slime. We can see them from here, great yellowish putrifying patches of scum. Their odor is one of decay. A white milky fluid oozes from them, spreading over the jelly-like protoplasm. The entire mass of slime seems . . . how can I describe it . . . more passive. No swirling hungry waves as before. Reports from other outposts indicate that these yellow patches are appearing in profusion all over the great grey sea.

"As I watch the new growths spread-

ing like oil on water, I cannot dispell the impression that some of the protoplasmic cells have turned against the parent body, are attacking it. They are like great sores, huge splotches of infection, spreading more swiftly than even the protoplasmic organism itself.

"While I have been speaking, I have had my eyes on a new yellow patch. It is growing with incredible speed, forming a pulpy mass on the glistening expanse of slime. What all this means, I am unable to say, but we here are extremely excited. It may be a parasite of some sort, in which case there is hope for humanity. On the other hand it may be an even more virulent growth. If only that great expert on protoplasm, Dr. Halwell . . .

"And that reminds me. Just prior to his death the doctor handed me an envelope to be opened forty-eight hours after his demise. Though it lacks some fifty-five minutes of the specified time, I am, in view of these strange new growths, going to open it in hopes that it may shed some light upon them. One moment, please.

"Here we are. The notes are a hasty scrawl, written on the night we attempted to isolate the cellular organism with fire. I shall read them verbatim. Quoting now Dr. Halwell:

"'AS I write these words I am witnessing man's stupendous failure to overcome the rampant protoplasmic cells with fire. Hope is now almost completely gone. We have no time to make other efforts. The cells multiply too rapidly. One chance alone remains.

"'As is well known, this inchoate mass is primal life, the culture which, formed chemically, perhaps, on the muddy sea-floor millions of years ago, evolved into lower life of the jelly-fish, mussel type and thence by various stages into man. Something, however, must have kept the protoplasm in check in those days. Otherwise, finding ample sustenance in early types of flora, it would have covered the entire earth and died of starvation.

"'It has always been nature's rule to provide a natural enemy for all forms of life so that no one type may predominate. But what of this primal slime? There was no other animal life to prey upon it, yet it was kept within bounds. There can be but one answer . . . that conflict existed among the cells themselves, that parasitic growths fed upon the primal life.

"'For weeks I have sought a parasite for pure protoplasm. A moment ago a twinge of pain from my stomach brought me the solution. I am suffering from Encephaloid or soft cancer. At best I have only a few months to live. And cancer is a parasitic cellular growth. Bodily cells rising in revolt, fattening off of the rest of the cells of the body, inciting similar revolts in the form of secondary growths throughout the system. Theoretically, if vital organs were not destroyed, bringing death, the cancerous cells would spread, crowding out, destroying all normal cells until the body was one great mass of cancerous growth which, lacking further nourishment from normal cells, would then die of starvation. Why not do the same with the protoplasmic mass? *

* Halwell's question is logical. Cancer has been transferred from one experimental animal to another by introduction of diseased tissue. Protoplasmic cells do not digest their nourishment. They absorb it cell by cell. Moreover, the swirling motion of the slime would spread such diseased culture rapidly throughout the entire mass. Lacking human functions such as the cleansing blood-stream, the elimination of poisons by corpuscles or phagocytes, cancerous growth among protoplasmic cells should be extremely rapid. Far more rapid than the multiplication of the life cells themselves. Once the parasitic cancer growths began to feed upon the protoplasm, they must inevitably bring about its destruction.—Ed.

" 'We must fight cells with cells. But to wait, produce cancer culture in laboratories, means a loss of time, and every moment is precious. Even a day's wait would mean millions of dollars worth of destruction, thousands of lives . . . would increase the size of the vast desert which will be revealed when the sea of protoplasm is finally destroyed. Two days at least for the parasitic cells to start work, weeks before they finally devour all the life cells and die themselves of starvation.

" 'The work of disinfecting the putrifying mass of cancerous growth will be unpleasant but not overly dangerous. All this, however, is in the future. Right now time is short. We must introduce cancer cells into the protoplasm . . . at once, before more homes and crops are destroyed. What better way than to offer my own cachexious body to overcome the horror I have brought upon the world? Halwell.'

"THAT, listeners, is Dr. Halwell's last message. We . . . I . . . it is difficult to put into words the emotion called up by his great dramatic sacrifice. Surely, no more splendid man of science has ever . . . Wait! Just a moment, please! Something is happening . . .

"I don't know just what it is. There is a rifle fire in the city behind me. I hope it's not another outbreak of looting . . . No! The national guards are firing volleys into the air! It's a celebration of some sort.

"Crowds of refugees, halted in their flight, stand dazed, unable to comprehend. Psalms by the devout Mormons . . . joyous shouts . . . The look on these people's faces! I don't understand . . .

"Hey, Ed, what's it all about! Why are they . . . What! You say . . .!

"Ladies and gentlemen, Dr. Halwell's gallant sacrifice has not been in vain! We have just learned that the protoplasm has advanced only several inches in the past hour! From other points along the edge of the engulfed area we hear that it has made absolutely no further progress! The yellow cancer cells are multiplying with tremendous rapidity everywhere, destroying their host, the immense mass of grey life cells!

"This . . . this is the greatest moment in history! Earth, humanity, saved! The protoplasmic cells stopped. Earth saved! *Saved!*

"It . . . At such a time I find it hard to carry on. I . . . I'm sure you will pardon me for a moment if I take time out and . . . and pause for station identification This is the American Broadcasting Company."

Lundstret's

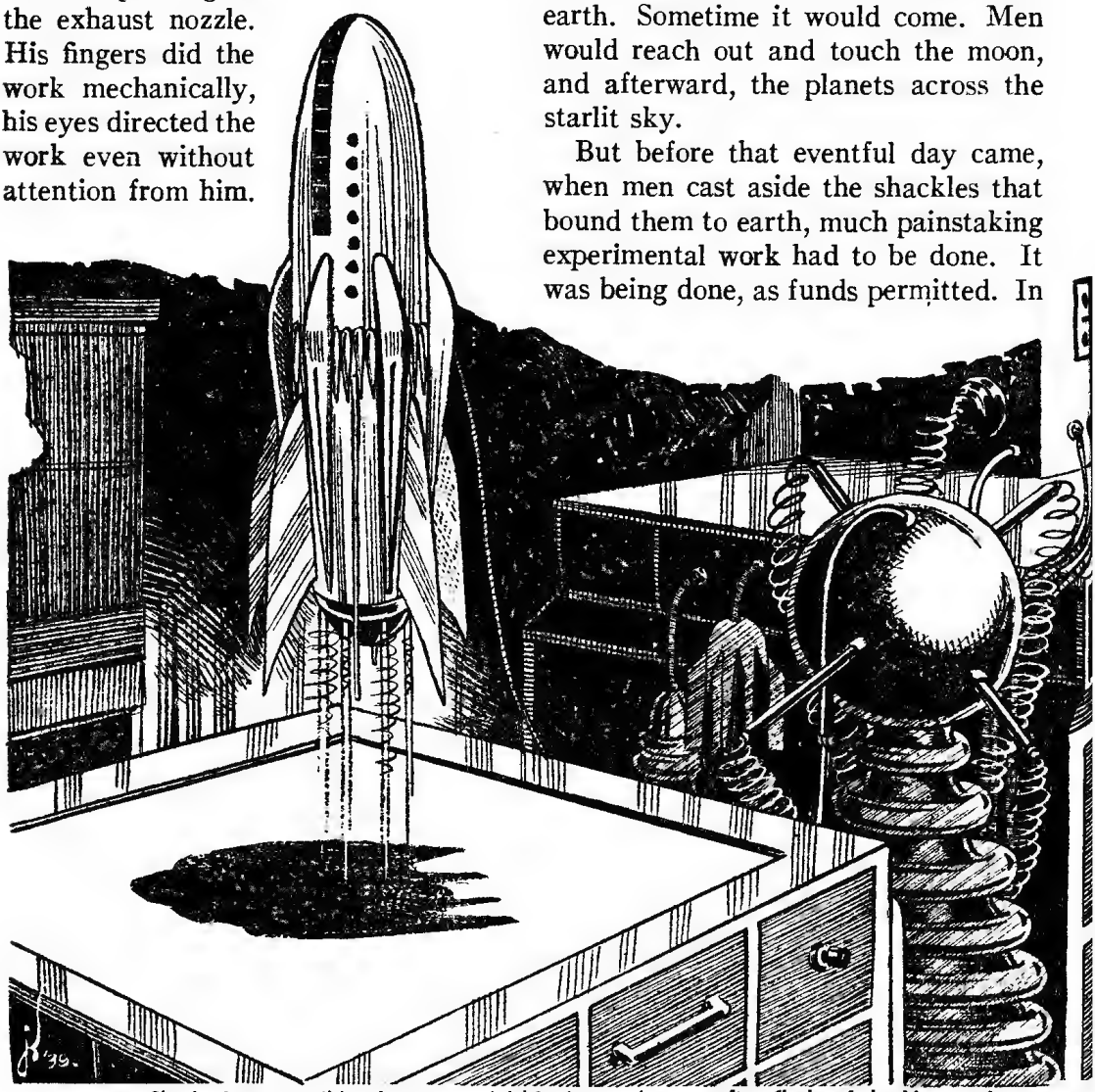
CHAPTER I
One Man Dies

SOMEWHERE, in the house above him, the telephone rang.

Martin Langley didn't hear it. His ears registered the sound but the mental impression never got through to his mind. He went on working. Deftly, gently, with loving care, he filed the round opening of the exhaust nozzle. His fingers did the work mechanically, his eyes directed the work even without attention from him.

In the back of his mind, he seemed to see through and beyond the nozzle, beyond the firing chamber above it, beyond the circling feed lines designed to carry fuel downward, beyond the fins and vanes of the housing, to the great grandson of this experimental rocket motor, to the dimly visioned not yet clearly seen future rocket motor that would carry a ship—and men—from earth. Sometime it would come. Men would reach out and touch the moon, and afterward, the planets across the starlit sky.

But before that eventful day came, when men cast aside the shackles that bound them to earth, much painstaking experimental work had to be done. It was being done, as funds permitted. In

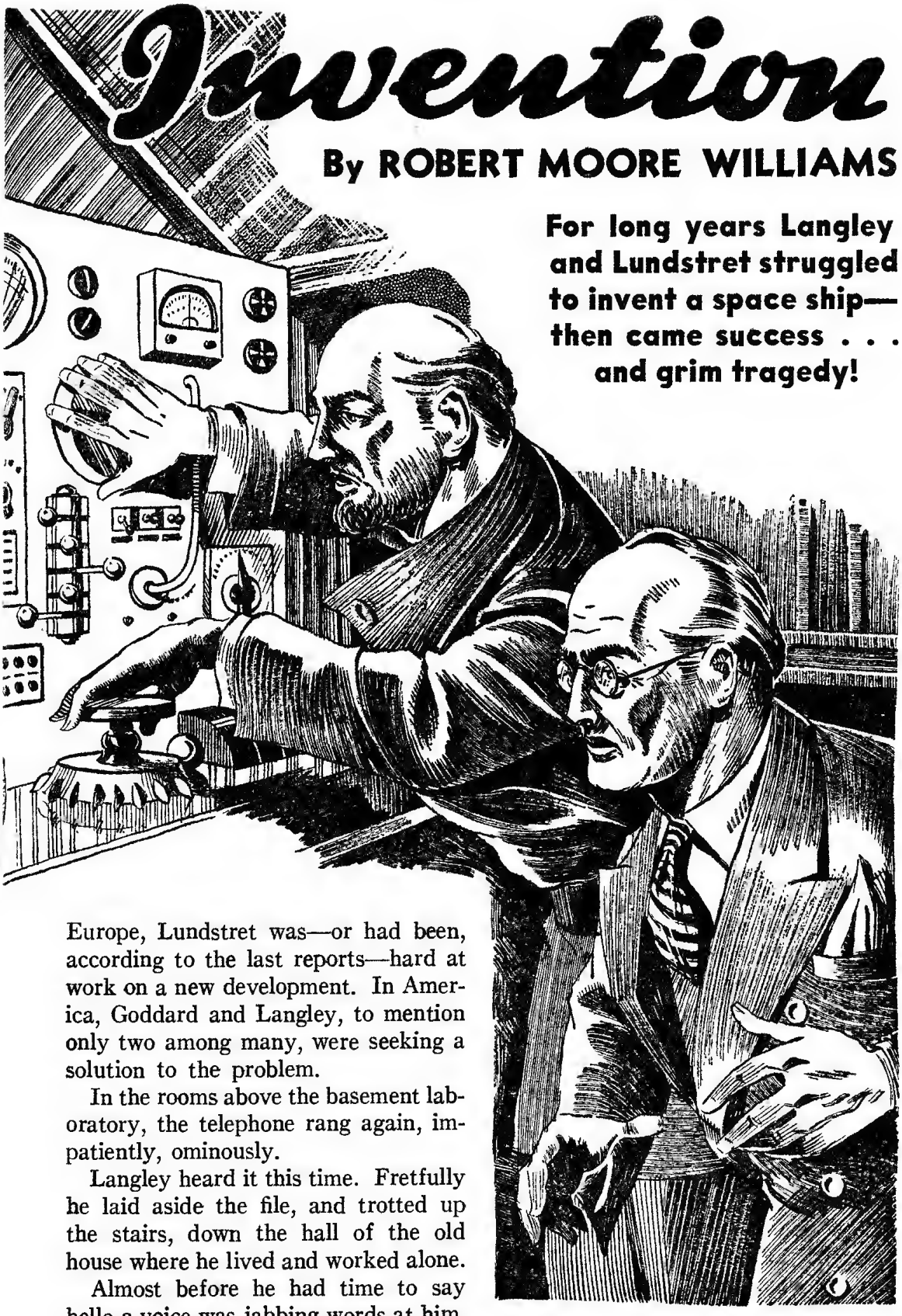


Slowly, imperceptibly, the tiny model lifted on pale rays—*first flight of the Voyager!*

Invention

By ROBERT MOORE WILLIAMS

For long years Langley and Lundstret struggled to invent a space ship—then came success . . . and grim tragedy!



Europe, Lundstret was—or had been, according to the last reports—hard at work on a new development. In America, Goddard and Langley, to mention only two among many, were seeking a solution to the problem.

In the rooms above the basement laboratory, the telephone rang again, impatiently, ominously.

Langley heard it this time. Fretfully he laid aside the file, and trotted up the stairs, down the hall of the old house where he lived and worked alone.

Almost before he had time to say hello a voice was jabbing words at him.

"MR LANGLEY! This is Bob Forbes of the Sun-Globe. You remember I interviewed you about six months ago on your rocket experiments? I want you to help me out, Mr. Langley. I've got the biggest news story of the year ready to roll. It may be the biggest story of the century, of the last thousand years—" The voice rattled on, firing words with the rapidity of a machine gun.

"Eh? What's that? Who are you? Forbes? Forbes? Yes, I remember a Forbes. What do you want, man? I'm busy, and I don't like to be interrupted." Langley was a little dazed. Part of his mind was still dreaming of space flight.

"I don't give a damn how busy you are, you'll want to hear about this," Forbes snapped back at him. "It's big, I tell you. Big! If it's what it looked like, what I think it is, it's the biggest thing that ever happened. I want you to check it for me, to make certain this fellow is not putting on a fake. Also, I want you to get me into his laboratory. I got a tip, and watched him run a test trial without him knowing anybody was watching. When I tried to break in, he threw me out. But with your reputation in this field, your name, you can get in. He won't dare throw you out, nor me either, if I'm with you. And I'm telling you, we'll scoop the world!"

Forbes' voice, snapping over the telephone, was tense with excitement. But the words left Langley bewildered.

"My dear young man," he interrupted. "I would be only to glad to help you in any way I can. Unfortunately I haven't the vaguest idea of what you are talking about. If you will please be a little more definite—"

"Definite? Oh, I'm sorry, but this has got me so excited I can't talk coherently. I'll tell you what it is, Langley. It's controlled, perfected rocket flight!"

LANGLEY felt the wild thrill of a nameless impulse. Perfected rocket flight! The dream he had slaved for twenty years to bring to reality. It had been done. Momentarily, he was a little sick. He had failed, personally; those twenty years had been wasted. Somebody had solved the problem before him. He swallowed. Then the thrill came again, stronger than ever. He was a true scientist, above personal feelings. It didn't matter who had solved the problem. All that mattered was that the problem had been solved.

Wings to reach the moon! Wings to reach the stars!

Then he thought of the technical details involved in the solution of that problem, not one, but dozens, hundreds of baffling perplexities that keen scientific minds had tried to solve, and had failed. He became suspicious. He wondered if Forbes was telling the truth. It looked like too big a job for one man to have done alone, unless that man was more than a genius. He wondered who the man was, and demanded this information from Forbes.

"I don't know who he is," came the wailing answer. "Listen, Mr. Langley, I'm not trying to take you for a ride. I'm giving you straight dope."

"How can you be telling me the truth when you don't even know the name of the man who is reputed to have made this invention?" Langley demanded angrily.

"It was like this," came the tense reply. "I got a tip that an old duck down at 3413 Yeatman Avenue—that's a tenement district—was working on some kind of an invention. Naturally, I barged down and tried to interview him.

"He wouldn't even talk to me. He was scared as the devil about something, and he wouldn't see me, wouldn't tell me what his name was, wouldn't even admit he had an invention. That made

me all the more determined to find out what he was really up to. He has a lab up on the top floor.

"I went into a building next door, went across the roof, and watched him through the skylight. He's a little, wizened, bird-like duck; a short black beard and heavy glasses. He was busy as hell working with a cylindrical object about four feet long. It was lying on a heavy table. A set of cables ran from it to a control board. While I watched him, he began operating the controls, and that damned cylinder gently lifted itself from the table, rose up in the air, supported on some sort of flame pouring from two slits in the lower side. He maneuvered it all over the room. I'm telling you I saw it. And if he hasn't got perfected, controlled rocket flight, operating on some new principle, I'll eat my hat.

"After I had seen it work, I tried again to interview him. He was the most scared man I ever heard try to talk English. Somebody or something is after him, and he thought I was one of them. *Now* are you going down there with me, or am I going to have to get somebody else?"

LANGLEY made up his mind. "I'm coming. Where are you?"

"In a drug store on the corner of 3200 Yeatman," Forbes answered. "Two blocks from where this fellow lives."

Langley started to hang up the receiver, but its sharp hiss made him jerk the instrument back to his ear. Startled, he listened.

"Langley, two men just came into this drug store. Ever since I left that roof, I've had a hunch I've been followed. They're looking toward this booth. Now they're coming toward me. Listen. If anything happens—"

The quick flow of words was broken by a splitting crash, the roar of a pistol shot.

Somewhere, off at the end of that telephone wire, Langley heard the reporter groan. Then his voice rasped. "They've got me, Langley. You—carry on—Don't—mind me. Get to the fellow—with the rocket ship!"

The pistol roared again. Forbes groaned. There was a thump as of a body falling. Then there was nothing.

Langley jiggled the hook. There was no answer.

Somewhere in the city a man had died. Somewhere in the city another man had perfected rocket flight.

Langley didn't waste any time getting his hat and coat. He went out of the house without them, at a dead run, wearing a dirty lab apron.

He had not realized it was so late. Already on the streets the newsboys were calling the morning papers. Or was it an extra they were hawking? Dimly he heard them crying, "War Threatened in Europe—War—"

He jerked open the doors of his garage, leaped into the seat of his ancient but servicable automobile, roared out into the night.

CHAPTER II

Lundstret

HE saw, before he stopped, that the crowd of curious gawkers was already thinning around the drug store. A man had been shot. Those passing by would stop to look and shudder, but they wouldn't stay long. What the hell? Just another dead man. That wasn't much of a novelty.

The ambulance had been there and gone. The police, vaguely perturbed, had lingered longer before they left.

Langley dashed into the drug store. The pimply youth at the soda fountain was still a little white around the gills.

He was busy ladling up ice cream for the extra customers who had been attracted into the place by the shooting. The manager was helping him. For once, business was good.

"Mister," the manager said, "he came in to use the telephone, and these two slugs followed him in. They let him have it. Then they jerked out his billfold and some papers he carried, and beat it. Yeah, he was dead. No, the cops couldn't identify him. What's that? He was a reporter? Holy cow! We thought he was just some gangster, but if he was a reporter, there sure will be hell to pay in this town. Wait until his paper learns about him getting killed!" The manager's eyes popped out. He was thinking of banner headlines and rewards. He started to stutter something, but Langley didn't wait to hear what he had to say.

Minutes were vital, and he knew it. There was no time to go to the police, no time for involved explanations. Forbes was dead. The men who had struck once would not wait to strike again. That they had waited at all was probably due to lack of knowledge. If they had heard what Forbes had said, they knew the invention they were seeking had been completed, they knew their wait was over.

LANGLEY, hearing the newsboys hawking their papers to the crowd outside the drugstore, suddenly saw the desperate need of haste. More was involved than the death of one man. The lives of millions—

He didn't have a weapon. He didn't wait to search for one. His car was forgotten. The address Forbes had given him was only two blocks away. He ran that distance.

It was a block of tenements, dirty and grimy and mostly dark. Flaring shadows from the single street light on the corner. Shadows in basement entrances, shadows in the dark openings to the buildings. In any of them desperate men might be hiding, waiting.

He found the address. Four flights up a dim light gleamed in the attic.

A light! There was hope then that he had got to the man who lived in that attic in time.

He pounded up the stairs. His forty-five years seemed to slip away from him, leave him an athletic youth of twenty.

There was only one door. He knocked on it.

There was no answer.

He rapped again, louder, harder.

The sound of a stealthy step and the creaking of a board came to his ears. Then a guttural harsh voice said. "Who is it?"

"Langley. Martin Langley. Open up. I have to talk to you."

"Langley?" The man inside was surprised. "Not the Langley who has in this country the rockets been working with?"

It was Langley's turn to be surprised. The man had heard of him, possibly knew him. "Yes," he answered. "Open up."

"Vun minute," came the answer. "I make sure."

A panel in the door slid aside. A bearded face, weak eyes blinking behind heavy spectacles. For a minute the man stared. Then he jerked the door open.

"Langley! I am honored. Come in, come in."

In startled recognition Langley gasped one word. "Lundstret!"

HE knew this man. He had never met him, but he had seen his picture many times, read his articles, corresponded with him. Lundstret, the European rocket man.

"Yah," Lundstret answered. He peered past Langley down the hall, pulled the surprised, inarticulate scientist into the room.

"I thought you were in Europe," Langley gasped, shaking the outstretched hand fervidly. "I hadn't heard from you, or about you, in—well, it must have been two years, but I thought you were too involved in your work to write. What—what happened? How did you get to this country? When did you come? Why didn't you let me know you were here?"

Once started, the questions tumbled over each other.

Lundstret started to answer. He shuddered as his memory took him back. There was pain in his eyes, pain springing from the soul behind them.

"In concentration camp I vas, for over a year," he shrugged. "My politics with those in power did not agree. I escaped, fled to America, where I hoped to find freedom, a year ago. A vunderful year it has been. Such freedom, such vork I have done!"

The hands moved in ecstasy, came to a sudden halt, and fear showed on the bearded face. "But now, I am afraid, they have found me out, and are after my invention." He shook his head violently. "These hoodlums, they shall not have it. But I was afraid. Only tonight, some young man twice tried to get in here. I thought they were after me again—"

The words were twisted, the sentences incoherent, as Lundstret strove to put his meaning into unfamiliar English.

"A young man? That must have been Forbes!" Swiftly, Langley told the inventor all that had happened, including the death of the reporter.

LUNDSTRET paled, then spoke softly, sympathethically. "I am sorry. I did not know. The young man was killed?" The eyes were moist with unshed tears as he thought of the death that had come so suddenly to the man who had tried to talk to him. Then the eyes were hard, and the voice was harsh.

"The hoodlums, shame on them. Agents they force to go all over the world, prying and searching. Me they are searching for. I vas right. They vere closer than I knew. They struck the young man down, to seal his lips. Better it had been me. I am old, and I do not fear death. But they do not strike at me. They vait, like vultures, until I have finished. Then they will strike—"

"In that case," Langley interrupted. "I got to you just in time. I'm moving you out of here, moving you to a safe place, tonight!"

Lundstret shook his head. "Tomorrw is soon enough. Or the next day."

"I'm damned if it's soon enough," Langley roared. "Tonight. Right now. I don't know what you've got, but whatever it is, it must be plenty important."

Lundstret smiled bitterly. And shook his head. "I thank you, my friend. But you do not understand. There is no danger tonight. These agents, they kill, and then they run to their holes like rats, knowing your law will be after them, knowing they cannot escape punishment in this country. A week, two weeks, they will skulk in their holes before they dare venture forth. Tonight, we are safe. Besides, tonight I vant to show you something that you will like to see."

Lundstret smiled. He was thinking about the something he wanted to show Langley, and in thinking about that, the fear that had lived with him so long went away. The seeker of knowledge for its own sake showed in his smile, the true scientist, working with no thought

of personal gain, working for the good of the race, working that men might find, in this particular instance, wings to reach the moon; and the planets beyond.

Protesting, doubting, Langley permitted himself to be led into the adjoining room. And the thing he saw there made him forget everything else.

CHAPTER III

The Voyager

THE model was just as Forbes, peeping in from the skylight overhead, had described it. Roughly cylindrical, with a pointed nose and a blunt tail. Worked out in beautiful detail, complete in every miniature fitting, from the rows of observation ports to the tiny locks on the side, the model lay in its cradle on the table, a shimmering shell of gleaming metal.

Lettered on the nose was the name: *Voyager.*

Langley didn't say a word. He walked around the model, looking. Just looking. Lundstret pattered along behind him, cooing like a mother over a baby in a crib.

Langley cleared his throat. His eyes followed the control cables feeding from an open port to a panel switchboard across the room.

"I'm only going to ask you one question," he said. "Will she fly?"

"My friend," Lundstret gurgled. "Happy am I that question to be able to answer. She will fly."

"In here?"

Lundstret nodded, and echoed the words.

Langley sat down in a chair. He sighed. "Twenty years," he said to himself.

"What?" Lundstret turned from the control table.

"Twenty years I've tried to make one of them fly," Langley answered. "Nine minutes was the best I ever got."

"Oh," said Lundstret, comprehending. He moved across the room, stood beside Langley. Very gently he patted the American on the arm. "I am sorry my friend, that you failed. The principle on which you worked was wrong." He paused, continued softly. "Let me say this, my friend. I am greatly honored to have here tonight to witness the first demonstration of the operation of the *Voyager,* the great American scientist: Martin Langley."

Langley coughed. His voice was gruff. "Go on with the demonstration."

CHUCKLING, Lundstret pattered across the room toward the control panel.

"The power is self-contained," Lundstret stated. "I merely control it from here."

He moved a switch. For a moment there was utter silence. Then Langley realized he was hearing a soft hum, dim and weak and seemingly far away. He stared at the model. The knuckles of his hands showed white as he gripped the arms of the chair.

In tiny slits along the base of the model a faint light began to show. It wasn't exactly light. It was a shimmering radiation, as if millions of microscopic pin points were exploding in bursting brilliance. It looked like—With a grunt Langley recognized what it looked like: The explosion of the atoms of radium paint seen under a microscope. Millions and millions of tiny points of fire flared in the slits set pointing outward under each side of the model.

Langley did not know he had stopped breathing, stopped thinking. He did not know his mouth was open, his eyes bulging. He only knew that he was looking at something that had sprung from the

brain of oppressed genius flowering in a new land.

For the model started to lift from its cradle on the table. The hum deepened and the jets of exploding light in the slits swirled faster. There was a sensation of strain, as if the model was tugging at the lines of gravity, was fighting viciously against the grip of the earth giant. And winning! Winning that fight! Rising, rising slowly, easily, a fraction of an inch at a time, rising as no airplane ever rose, as no bird ever took to the air, rising on the cushions of the jets in those slits.

Rising with wings! Wings to reach the moon, to reach the planets, perhaps to reach the stars beyond.

MOVING over the room, as jets in the blunt tail leaped to flashing life, forcing and guiding the ship. Stopping, moving backward, as jets in the nose pushed outward their swirling particles at the speed of light, pushed against inertia, just as the jets on the bottom pushed against the lines of gravity.

Maiden flight of the *Voyager*.

Langley stared at the model, moving about the room in response to the impulses originating with Lundstret. This was no fakery. This was no trick. This was reality. Now men had wings, real wings.

The glow, the exultation, he felt at that moment was worth twenty years of fruitless searching. True, it was not his ship, the glory was not his personal glory. But that didn't matter. Now men had wings.

Langley stared at the model. Mechanically his eyes registered the impressions they were recording. In the back of his mind other visions were forming, grim visions, as real as that straining model.

He looked through that ship, beyond that ship, looked, and saw— The headlines of the evening papers.

"War Threatened in Europe. War—"

Now men had wings. Yes, but how would they use them?

Europe in arms and arming feverishly against the day of reckoning when the hates of centuries, the greeds and the lusts of the ages, broke out anew. Millions of people, held in rigid dictatorships, swayed and bombarded by constant streams of propaganda, taking up arms to fight each other, looking greedily at other lands to conquer, looking enviously at America, restrained from direct and vicious attack only by three thousand miles of water.

Now men had wings. Now, when this model was duplicated in full size, those wings would carry them across those three thousand miles of water. The barrier protecting the shores of America would be a barrier no longer.

If this model got to Europe, to Asia, if the plans for it got out of this room—

Langley shuddered. He was sick. Sick inside.

The world ought not to be like that. Men should not be like that.

But the world was that way. And men—

Tonight, here in the United States, envoys of an European power had struck down a reporter, searching for this model, searching for the plans to construct it, keeping close watch on the man who had designed it, waiting to see if he was successful.

And he was successful. The *Voyager* flew!

LOOKING through that model looking forward to what would happen if it ever got out of America, Langley knew that he was sweating. Then he was on his feet, and Lundstret, in perturbed unease was facing him.

"Protection! You've got to have pro-

tection! If the plans of that ship—"

"The plans," said Lundstret significantly, tapping his forehead. "Are here. You need have no fear, my friend. I well apprehend what would result if the hoodlums could get them. Never worry, they will not get them from me. In America I have lived one year. That year has taught me to love it. No, I will never give up the plans to this ship. First, I will die."

He was a little man. Physically he didn't amount to much. But he stood very straight and spoke very firmly. Langley knew that he spoke the truth.

But even the truth needs protection.

"That model," he gestured toward the ship still floating above the table, cushioned on its flaming jets. "They might get it. They're here, close enough to kill a man not two blocks from here tonight. We know that much, and we're not taking any chances. I know the commissioner of police. I'm getting an armed guard out here, right now. Where's your telephone."

"Do you think there is danger?" Lundstret questioned, alarmed, his eyes going from the American to the model ship.

"Think it! I know it. Your telephone. I'll call the commissioner!"

"But a telephone I do not have. I have not needed one—"

Langley groaned. Purposefully, he strode to the door. His hand on the knob, he turned, faced the now thoroughly anxious rocket man.

"I'm going out and phone. You listen to me. What ever you do, under no circumstances let anyone in this room until I return! You understand? Lock the door behind me, and let no one in.

"But certainly—"

Langley didn't wait to hear any more. He hesitated in the hall just long enough to hear the lock click behind the door. Then he raced down the steps.

OUTSIDE, he looked up and down the street. It was dark and deserted. Probably the nearest phone was in the same drug store from which Forbes had called him earlier in the evening.

He was at the end of the block when he heard in one of the houses on the dark street, a noise that sounded like a crash. He listened, but it didn't come again.

He raced on to the drug store, put through the call to the astonished police official, was promised speedy and efficient protection.

Less than ten minutes had elapsed between the time he left the house and his return. Puffing and panting he looked up toward the attic room. The light still glowed in the window. He took a deep breath. Nothing had happened in his absence. He started up the steps.

He heard the feet come racing down the wooden steps inside. His heart throbbed once and then seemed to stand still.

The door burst open in his face. Two men dashed by him, fled madly down the street.

He didn't attempt to stop them. It was useless.

He flung himself toward the fourth floor.

The door of the attic had been broken from its hinges, sure evidence of the violence that had occurred within.

He raced into the room.

The model was gone. Its control cables had been severed with one sharp blow.

Lundstret lay on the floor, a slowly widening pool of blood ebbing from his chest.

GENTLY, Langley knelt, gently he took the head in his hands. From the location of the wound he knew

there was no hope. It was only a matter of minutes.

Lundstret opened his eyes.

"Sorry," he said. "They must—in the hall—have been listening. In they broke—as soon as you left."

"You'll be all right," Langley lied. "The police are on their way. We'll have you to a hospital in a jiffy."

Slowly, Lundstret shook his head.

Langley bit his lips. There was a question booming in his mind that he wanted to ask, but with a dying man in his arms he hated to ask it. Lundstret, looking up, asked it for him.

"My model—you want to ask about?"

"Lord, yes!" Langley almost sobbed. "They got it, didn't they?"

To his incredulous amazement, Lundstret shook his head.

"No—no . . ."

"What—what did you do with it?"

Weakly, Lundstret gestured toward the ceiling. "Look up, my friend . . ."

Langley's eyes jerked upward expecting to see the little ship nuzzling against the ceiling.

Instead he saw—a broken skylight!

His eyes came back to the dying scientist.

"Out there," Lundstret whispered. "Only a minute—I had—before they broke the door. It was the only way—to save your and my country—I turned the controls on—full power. Enough energy she has to reach—escape velocity. . . ." *

"Escape velocity!" Langley knew he was gibbering. "You mean—"

Lundstret tried to nod, and coughed blood instead. Then the weak whisper came.

"It was—the only way. She will leave earth—and never return . . . . I was afraid—if I didn't send her away forever—she would fall into the wrong hands. I didn't dare—that risk take . . ."

Escape velocity! The speed needed to break away from the bonds of the earth giant. The *Voyager* was going away from Earth. Rising, rising, rising, somewhere in that black void overhead.

Lundstret's eyes closed, then popped open again. "You will work on, my friend," the failing whisper came. "Perhaps—in a few years—with the knowledge that there is a solution—you will find it yourself. Perhaps—by that time—science will be ruling the world—instead of the hoodlums. . . ."

The whisper failed in a gurgle. The eyes closed again, closed forever.

AN hour later, after the police had gone, Langley left the shabby tenement. He stopped outside, and looked up. He couldn't see her, but he knew that somewhere overhead the *Voyager* was rising, taking with her the wings that belonged to men—to men of science.

He was sick inside.

Then he squared his shoulders, and looked up. Temporarily, the hoodlums had won. But their victory was only temporary. In the long run science would triumph. Some day there would be another *Voyager,* and the hoodlums would not clip her wings. She would rise in glory to the stars.

His shoulders set square and his head up, Martin Langley walked down the street.

THE END.

* Escape velocity. In order for an object to escape the gravitational influence of the earth, and thus escape into space so that it will not return, it must attain an initial velocity of seven miles per second. Anything less than this, the rocket will once again descend to the surface. Thus, when Lundstret informed Langley that his ship had escape velocity, it meant simply that he was sure it could not fall into the hands of the wrong people, because it would never come down again, but continue on into space forever, or until it fell into the gravitational influence of some other heavenly body.—Ed.

First came the murmuring, then incredible ruin, as if from an air raid

Microbes From Space

By THORNTON AYRE

There was no reason for buildings to fall, yet they did, filled with a weird murmuring.

CHAPTER I

Death Comes to New York

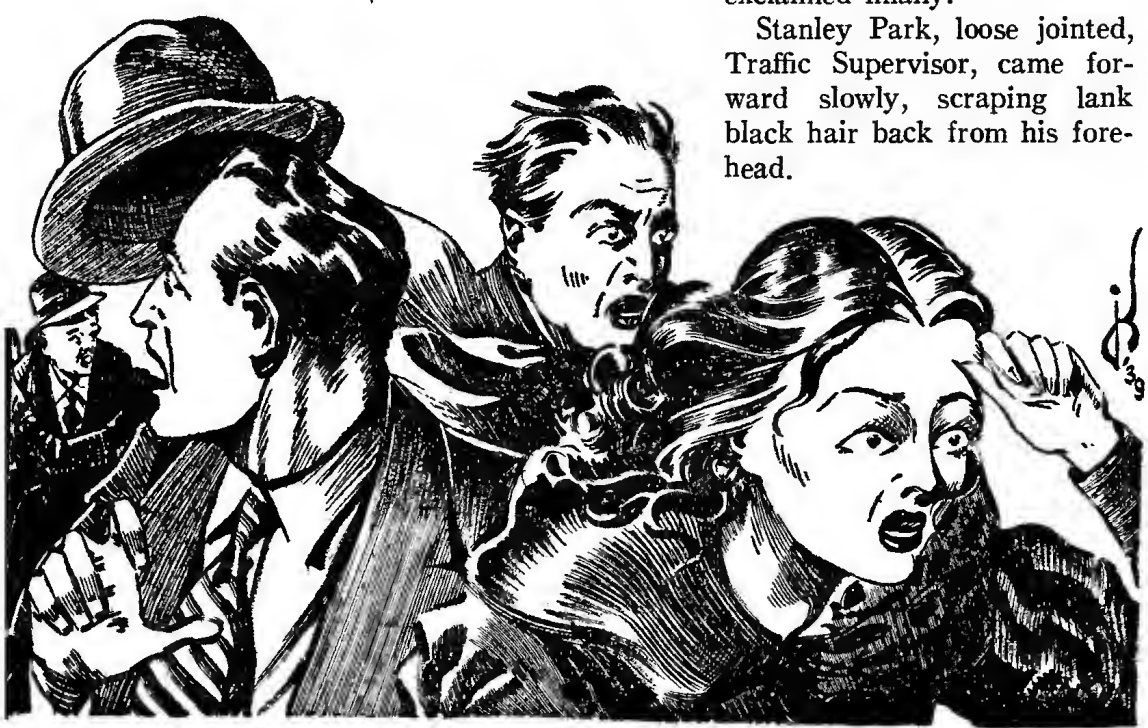
SUMMER darkness had settled over New York. For a few minutes there was a transient quiet—a quietness that bordered on uneasiness as through every quarter of the city there crept that murmuring, that strange, incredible murmuring that had existed now for two days and nights.

Then the lights, born of atomic power, came up. Festoons of lights—advertisements — millions of windows. Power—the vast power of 1970—surged again. Night took on duty. Traffic roared; trains screamed; an airliner moved unerringly to the radio directional towers. . . . And the murmuring was forgotten—for a time.

Deep in the midst of this maw of human industry a dark headed, gray eyed, youngish man pored over a long record sheet that had just been brought in to him. His frown deepened; his expression changed to alarm. Never in his experience as Chief of the New York Bureau of Public Safety had he seen such a list of accidents.

"Say, Stan, take a look at this!" he exclaimed finally.

Stanley Park, loose jointed, Traffic Supervisor, came forward slowly, scraping lank black hair back from his forehead.



"Something devilishly wrong here," Martin Day said, half to himself. "Three elevateds wrecked, two subway collisions, and now a transatlantic airliner drops to pieces in midair!"

Park studied the report and sucked his teeth. "Just goes to show you," he sighed. "Always trouble everywhere—nothing but trouble. Guess it must be the human element—"

"Human element nothing!" Mart glared up at him. "It just couldn't enter into things like this. Yesterday there were four big smashes — day before there were two. Now we have six—"

He broke off and turned as the radio started into life.

"Calling Bureau of Public Safety, New York! Triple smash-up on Bronx subway. Three trains jumped rails—collided. Dead estimated at five hundred. All ambulances ordered to spot instantly. Bureau, investigate immediately! That is all. . . ."

Mart smiled bitterly as he stared at Park's frozen visage.

"Well, laugh!" he snorted. "You thrive on trouble. Now's your chance—Better grab a hat and come with me. We've got to make some sort of a report on this, but God knows what it will be. Step on it, will you?"

ONCE they arrived at the scene of the disaster both men stood momentarily aghast at the extent of the damage. Dead were being carried constantly through the haze and dust of the blocked subway. Electric lamps flared their brilliance on tangled disorders of twisted steel and shattered glass. The wounded were shouting and screaming, only to be drowned out by the savage rattle of electric drills and the clangor of sledgehammers.

"Whew!" Mart whispered, pushing up his hat from his forehead. "This is about the worst of them all—" He broke off and grabbed a pallid doctor as he stumbled along the track.

"Say, any reactions from the survivor's?" he demanded, seizing the man's arm. "Any of them suggest a cause of this mess?"

The medico shook his gray head. He recognized Mart's face in the lights.

"Nothing definite, Mr. Day. Several of them have said it was the murmuring that did it— Absurd, of course. . . ." He pulled himself away and went on down the shattered vista.

Mart's face was puzzled as he stared after him.

"Delusions, I'd say," Park said sepulchrally. "Can't be an actual moaning—more likely caused by the wind. Else it's the dead trying to return—"

"Damned silly superstitious rot!" Mart snorted. "Be yourself, man. This is real, horrible tragedy! We've got to explain all this to the public. If we say that the murmuring caused it what's going to happen to us?"

They turned, headed slowly to the actual site of operations.

A METROPOLIS harassed by a growing daily toll of horrible accidents paid hardly any attention to the individual report of the Bronx subway disaster. Even less attention was devoted to the theory of the "murmuring." Those that did digest it said it was fantastic and that the Bureau needed reorganizing.

Some averred that people were suddenly losing their minds and thereby causing accidents. That was all very well, and feasible, in regard to train and general traffic smashups—but when it was found that buildings too were starting to break up, crushing those inside without the least warning, the human element had of necessity to be ruled out. Something was awry with the entire city! Nothing was safe!

A significant feature was that as the area of damage increased the murmuring became more audible. Until at last, after a week of smashing buildings, tumbling elevateds, and collapsing airliners the murmuring could be heard even above the natural roar of the city itself. . . . Yet, according to close inquiry, no other city had as yet heard this strange sound though thousands of people poured in just for the novelty of hearing it.

Mart Day became increasingly haggard. Upon him—and to a lesser extent on Park — devolved the whole responsibility for public safety and with natural savagery that fury of a terrified public descended on the Bureau. Desperately though he tried, Mart could do nothing in the face of this mysterious horror. All he could do was set the Bureau's analysts to work and spend his own time in trying to keep calm amidst chaos.

And the sweating analysts could find nothing! Every time they arrived on the scene of a disaster they found smashed and crumbled steel girders that no longer had any appearance of their former stable molecular structure. They tested and examined, peered through powerful microscopes, brooded over powdery gray dust that had been solid steel.

But Mart Day was keenly aware of the human side. He envisaged the ghastly slaughter that was likely to accrue unless science sowehow got to the root of the problem. The analysts, he felt, had missed something. Why, for instance, did the steel stop humming once it had collapsed?

He was no scientist in the practical sense; that was the main trouble—but at least he had the advantage of knowing where to locate one of the finest scientific brains in the country—Dr. Ward Black, his fiancee's father.

CHAPTER II

Mystery

EVA BLACK'S quiet, intelligent features were visibly concerned as Mart was shown into the spacious lounge of the New York apartment. she got to her feet immediately, held out slim hands.

"Mart, dearest!" Her violet eyes searched his pale, lined face. Quietly she led him to the divan.

"Yes, I know the strain you've been under," she said gently, as he glanced at her. "This horrible business of accidents— It's all so—so ghastly!"

"I rang you up twice in the fortnight preceding this awful week to try and make a date," Mart said slowly. "Maid said you were out of town. That right?"

The girl nodded slowly. "Yes; I have been away. . . ."

Mart stared dully round the well furnished room with its softly shaded lights.

"Everything all right here?" he asked presently.

. "So far—yes, but with the things that keep happening I don't suppose anywhere is really safe. . . . Mart, what did your men find? Surely they found *something?"*

"Nothing," he answered, with a hopeless shrug. "First we worked on the idea that steel might have reached a mutational change, even as uranium after millions of years changes into radium, then into polonium, and finally lead. We thought maybe steel had gone into a radioactive category— But we were wrong. Then we tested steel that hadn't broken down and we found it OK. The only fault is that it murmurs —*Murmurs!"* he repeated, almost shouting the word. "God, Eva, that murmuring is driving me crazy!"

"I suppose everybody feels that

way," the girl said, soothingly. "I hear it in this room— Somehow, I've become accustomed. . . ."

"I came really to see your father," Mart went on quickly. "He is about the only man who can possibly help us. In fact he's *got* to help us! The whole safety of New York, maybe of the world, depends on it! Good heavens, if steel should start to fail all over the globe—" He left his speculation unfinished, aghast. Then Eva said slowly.

"I'm afraid you can't see father, Mart."

"Huh? Why not?" he demanded, staring at her.

"Bacause. . . ." Her little mouth set with sudden firmness. "Because he's working on an experiment that must not be disturbed. He's at his laboratory, underground, behind locked doors, and nobody can get at him except me. I gave him my word that under no circumstances should he be interrupted."

MART gazed speechlessly for a moment, then suddenly he seized the girl's arms in his strong hands.

"Girl alive, do you realize the *urgency* of this?" he cried. "No experiment can be important enough to take precedence over human life. You've *got* to get him! If not that, then tell me where his laboratory is and let me see him."

"No, Mart—I can't . . ." The girl looked away, and as she did so the light caught her smooth forehead. Mart found himself noticing for the first time a scar marring its perfection. For the moment he forgot her strange adamancy.

"Say, where'd you get that?" he exclaimed, touching it lightly. "You never had it before. . . . Gosh, what a welt! What caused it? Incidentally, where *did* you go during that fortnight—?"

"Anything else?" she said coldly.

"I only asked!" he snapped.

"It seems," the girl said slowly, "that you came here to ask a lot of unnecessary questions—questions that I have no intention of answering. I don't see that I have to consult you if I decide to go away for a few days. . . . As to this scar it's nothing—only a bump. . . ."

Mart laughed shortly "I know the mark of an electroknife when I see one. Must have been a surgical job."

Eva sprang to her feet, surprisingly flushed and angry.

"Look here, Mart, I think it'd be better for both of us if we postponed seeing each other until we're both in a better humor—before we say something we might be sorry for."

He got slowly to his feet, eyeing her levelly. "What's wrong, kid?" he asked quietly. "What's all the mystery about? *Something* did happen in those two weeks, and you're scared to death that I'll find out what it was. . . . *What caused that scar?*"

She remained stonily silent, eyes blazing sullen defiance.

"Then you won't tell me where your father is?" Mart demanded. "You'll let the whole city go to rot first?"

Still she did not speak. Mart snatched up his hat furiously.

"O.K.!" he snapped. "How the hell do I know but what your father started the whole thing? Yeah — he's crazy enough. He must be crazy to have a daughter like you, anyway—!"

Then he was gone, the door slamming behind him.

AFTER a night's sleep Mart regretted his impulsive remarks of the night before. His nerves were steadier again: he realized he had been pretty close to breaking point. First thing he did from the office was ring Eva, was told by the maid she had gone away again, indefinitely.

That did not satisfy him. He took the

time off to visit her apartment.

"O.K.," he growled, as the maid merely repeated her words on the telephone. "I'll leave her a letter—and see she gets it the moment she comes back."

He settled himself down at the desk, wrote a meek note of apology and began to seal it in the envelope. As he moistened the flap his gaze settled quite naturally on the blotting pad, fixed on the reversed words—

". . . get well soon. Your affectionate Dad."

Get well? Scarred forehead? The two connections leapt automatically into Mart's mind. He was still puzzling over that two weeks in which the girl had vanished, the close of which coincided with the coming of the murmuring. . . .

Finally he sealed the envelope hurriedly, glanced around, then carefully took the top sheet of blotting paper and thrust it in his pocket. . . . He handed the letter to the maid as he went out.

Back in his office he turned all the stresses and strains over to Park for a while, while he studied the blotting paper in a hand mirror. What he could decipher left him more puzzled than ever. Obviously the letter had been written by Dr. Black himself: also, obviously, the girl had not been home for a personal discussion, nor had it been possible to telephone her. What there was of the letter was mystifying—

". . . so necessary nobody must know yet. Your courage in coming with me, my dear, was magnifi— And so high, too! One hundred and fifty miles, which . . . definitely an advance, if only it had not ended so tragically . . . and must work out details in my laboratory immediately.

"Get well soon,

"Your affectionate,

Dad."

MART sat staring in front of him, extinguished pipe between his teeth.

"Hundred and fifty miles high?" he muttered. "All ended so tragically? *What* did? Boy, I'd give my soul to know what happened in those two weeks Eva was away. I'll wager every cent I've got that it started the murmuring—"

He glanced up as Park came in, even more worried than usual.

"Worse than ever!" he groaned. "Murmuring noises have gone up by fifty percent today. People are being driven crazy with the racket. As for accidents— Whew! Twenty buildings in two hours this morning. Just collapsed into dust heaps! God knows how many dead. . . . Mart, we've got to *do* something!" he wound up in desperation. "We're the Bureau that's supposed to handle the responsibility for all this. Where do we start?"

"Might start by finding out what all this means," Mart snapped, indicating his notes and the blotting paper. "At best it's a hunch, but with too many coincidences to escape notice—" He jumped to his feet, snatched his hat. "I'm going to get the truth out of Eva if I have to beat it out of her. I've got to find her, somehow, even if I tear the city apart."

"Leave it a couple of days and you'll have no need!" Park sighed.

CHAPTER III

Tragedy

TO find Eva and force her by some means to piece together the odds and ends of the puzzle was a bigger problem than Mart had reckoned. Realizing he could do no more good at the Bureau he spent his time to the better advantage of trying to find the girl.

Mart wandered for hours, through the city that had lost its ordinary business normalcy. In all directions were fleeing people; on every hand, it seemed buildings were falling steadily like decks of cards. The ruin since the murmuring had begun was well nigh incredible—and it was a ruin that was advancing with tragic speed.

Automatically he turned toward the girl's apartment block for a last call. She might have returned— Then he stood appalled. The entire block had fallen down, was a tangled mass of bricks and girders, surrounded by ambulances, flaring lights, hoarse policemen, haggard and bloodstained civilians.

HE ran forward quickly, fought his way through the crowd to the roped-off front, stood staring at the survivors as they gazed in bewilderment at the ruins. . . . Then suddenly his heart bounded. There *was* Eva, in a torn dress, swaying to and fro holding her forehead. Dust smothered her from head to foot.

"Eva!" Mart screamed madly, and before anybody could stop him he burst through the cordon, clutched the girl's fainting form in his arms.

"Eva!" he panted. "What's wrong, kid? Hurt?"

She smiled wanly in the play of lights. "My—my head. . . . It sings and murmurs like the city. I—It's no use hiding it," she muttered, making a sudden effort. "The laboratory was under the apartment block — re-enforced basement. Dad's trapped down there; I got out just in time. Laboratory's safe, but the door's blocked. Get him out, Mart —he'll suffocate down there! Get him out! The whole city depends on it. . . ."

The girl closed her eyes, leaned against him. Mart gave a yell to the nearest workers, bawled hoarse instructions. In a moment he was recognized and his orders obeyed. Desperately shoveling, struggling men began to dig at the spot indicated by the girl's weary arm. She heard Mart's stentorian commands as though in a dream.

"Get the doctor out—fetch him to my place—the Bureau. If it's still standing, that is. . . . Hurry, boys—hurry!"

Mart turned, shook the girl back into brief awareness.

"You?" he whispered. "You don't mean your *head* is murmuring, surely? You mean you *hear* the murmuring, like the rest of us?"

"No—no, inside me," she sighed weakly. "I—" She got no further; her knees buckled under her.

INSTANTLY Mart swept her up in his arms, staggered through the debris and out into the comparative clearness of the main road. He waded for a mile through jammed traffic and fallen bricks, at last staggered into the Bureau, which he thanked Providence had so far escaped. And the place was full of injured people. Doctors were working feverishly on all manner of injuries—some slight, others severe.

Mart blundered through the midst of the jam into his own office, found Park busy trying to keep a check on events. He watched in sober astonishment as Mart laid the girl on the divan.

"You found her, then?" he asked briefly.

"Obvious, isn't it?" Mart snapped. "Fetch a surgeon in here—one who can be spared from a trivial case. Hurry!"

Park leapt for the door. In a few moments a worried surgeon in a white smock came in. Without a word he went on one knee beside the girl, made a swift examination. Then he looked up surprisedly.

"But this girl has no apparent injury!" he exclaimed. "All I can find wrong with her is shock and— Yes, she's humming!" he added, baffled. "Sounds as though it's coming from her head!"

The three men stood still from sheer perplexity, staring at the limp, ashy-faced girl. Then suddenly she stirred a little: without opening her eyes began to speak, hesitantly—

". . . a great gulf," she whispered. "Four little planets and four big ones. . . . One little one beyond. . . . Asteroids—Yes, the asteroids! Once a planet. . . . Now, just asteroids . . ."

The men crouched nearer, hardly breathing.

"Eaten a w a y — crumbled," Eva sighed. "Tiny beings—eat metals. Very tiny. . . . Millions! Myriads. . . . Ohh. . . .!"

She went limp again. Mart stared at Park and the surgeon as though they were phantoms.

"You got that?" he asked hoarsely. "Tiny beings who live on metals? That's what's been in our steel! Tiny beings, so small we couldn't see them even with a microscope— Absorbed the alloys of steel just as white ants eat wood and leave the shell behind! Live in metallic interstices—! Once lived on the planet that is now the asteroids; it became asteroids because they ate it away. That must be it—" He broke off, scowled. "But how on earth did *she* know?" he demanded. "What makes her buzz—?"

He swung round, aware that a haggard, elderly man in a dusty suit had been standing in the doorway, listening. Now he came forward, carrying a shiny black bag in his hand.

"Dr. Black!" Mart cried thankfully, gripping his hand. "Thank God you're here, sir, and safe! I—"

"O.K., leave that for now, Mart," the scientist said curtly. "There's work to be done." He swung round on the surgeon. "Got anaesthetics?"

"Sure— But say, what's wrong with her?"

"Plenty!" Black compressed his lips. "Inside her forehead is a metal plate—steel. She was seriously injured recently and I myself put that plate in for emergency purposes—"

"But surely, silver or gold would—" the surgeon began; then he broke off as Black glared at him.

"I know all about that, man. I had no gold one handy—but I have now, and it's got to go in right away. . . ." He wheeled round and snatched a shaped gold plate from his little bag. "I guessed this would happen," he panted. "Don't you understand? The damned Murmurers have got through her flesh to the steel content in that plate! That plate contacts her brain centers at certain places. These blasted things are living, thinking creatures—metal eaters. I never knew before where they originated, but I do now I've heard Eva's observations. For a moment or two her brain centers must have contacted the united force of several of those tiny brains in the headplate. She spoke, as though in a dream, of what she read from those minds—Where the hell's that anaesthetic, man?"

The surgeon jumped into life, summoned an anaesthetist from the neighboring room. The door closed. . . . Within moments the girl was entirely flaccid with the cone over her face.

CHAPTER IV

The End of the Murmuring

BLACK did not speak again. He washed, then donned rubber

gloves snapped out orders regarding the position of the lights, pulled immaculate instruments from his bag, then set to work.

As he worked, performed masterful trepanning—expert even for the advanced knowledge of 1970 medicine—the assembled men gained some idea as to why Dr. Black had once walked off with the world's prize for surgery.

No blood flowed; the electroknife prevented it. Probes which created automatic coagulation knitted the vital centers to the golden plate. The steel one, shining t h o u g h it was, already visibly pitted and scarred hummed as it was laid on the table.

For an hour Black worked, under intense strain, but at the end of that time his work was flawlessly done. He smeared across the final healing ointments, broodingly watched the scar on the forehead begin to knit slowly together.

Mart expelled a low, long sigh of relief. Black mopped his streaming face.

"She'll be all right," he said finally. "In a day or so— Needs rest. . . ."

The scientist turned aside, relaxed limply in the armchair, gratefully swallowed the glass of brandy Park handed to him. . . . Then Mart said quietly, "You realize, doctor, that you're about the only man alive who can suggest a possible means of destroying this ghastly menace?"

Black gave a brief smile, drained his glass. "I rather fancy I *have* destroyed it," he answered quietly. "Listen!"

FOR a long time Mart could not figure out what was different. Then suddenly he realized the truth.

"The murmuring's stopped!" he gasped. "Everywhere's quiet, for the first time in weeks— Dr. Black, what does—?"

"It means," the scientist said slowly, "that my reasoning is now justified. I started this whole business and it was up to me to destroy it—but to work out the details demanded absolute privacy and freedom. . . . I'll tell you what happened—

"In the first place, I tried out a new stratosphere globe I had invented—secretly, you understand. That was why no mention of it appeared in the papers. Eva was my only companion, and she came at her own request. We got up to one hundred and fifty miles . . ."

Mart nodded slowly, remembering the blotting paper.

"At that height," Black went on, "we became aware that our globe was smothered with rapidly growing pits and holes. The thing was humming, too. We came down rapidly, but before we had properly landed the globe fell in pieces. Eva was badly hurt, her head injured. For myself I somehow escaped. I rushed her to my laboratory and performed an operation on the spot, put in a temporary plate of steel. Then I dispatched her to a nursing home for proper care while I tackled the problem on hand—"

"You wrote her once?" Mart put in quickly.

"Yes—once." Black looked surprised. Then, "The trouble was that in the time I'd taken to operate on her that damned stuff in the globe had had time to spread. I got a piece of humming steel under my ultrapowerful microscope and with it I was just able to see the flux and conflux of myriads of minute creatures, living their own strange lives with an intelligent ordered scheme.

"In space, thanks to our globe, they had for the first time contacted an object heavy enough, and cool enough—as opposed to a meteor—to carry them down to Earth. In space, I imagine, they subsisted on metallic brickbats, which abound in the thousands. Likewise,

these creatures are able to live in air or without it, at will. In space their numbers were of necessity limited—but once on Earth they multiplied with incredible rapidity. . . .They are best imagined, I think, as bacteria. Bacteria of high intelligence, the last race of the planet that is now an asteroid—even as in the end our own world will probably be ruled only by bacteria.

EVA'S statement, unconscious though it was, shows where they came from. My problem was to destroy them. I had to work fast and in private. I commanded Eva to keep our laboratory a secret from everybody. On no account was she to disturb me; on that the fate of New York depended. Once beyond city limits I might find myself powerless to stop the menace.

"I reasoned it out finally that just as a certain stimulus of radiations will promote and sustain life, so an overdose of that radiation can kill. Out in space, the most likely stimulus for these Murmurers would be cosmic rays. Excess of them, at close quarters, might kill. It wasn't difficult to build my cosmic ray projector — time was my biggest enemy. Atomic force is a mastered science today, of course. By using copper blocks in the disintegration chamber, the resultant energy from destruction of electron and proton became cosmic waves. I had then to grade their strength so they would kill the Murmurers and yet be harmless to humanity. At last I found the right strength—had every detail ready. Then the apartment block came down.

"Fortunately the laboratory is reenforced. It held. Eva dashed to the entrance and got out. I was caught. . . . Your men got me out, Mart. But something else was worrying me. I had been aware, before Eva herself, that her head was singing a little. My main desire was to reach her, operate, save her life. . . . I did the only thing I could. I picked what few scientists there were on the spot at the laboratory, showed them exactly how to turn the projector in the fashion of a searchlight— Then I snatched up my surgical instruments and came here. . . ."

"Those scientists evidently got the idea," Park said, thoughtfully. "They've stopped it all right. . . ."

"I told them to keep on turning until they got fresh orders. . . ." Black got to his feet "We've wiped it out in New York, yes; my radius would incorporate that. But wherever they appear outside New York, if they ever do, they must be instantly located and destroyed. There may be others in space; that is for space navigators of the future to puzzle out. . . . As to the murmuring, I expect you've realized it was caused by the ceaseless movement and industry of millions of tiny beings. Incessant activity. . . ."

Mart nodded slowly, stared out of window on the buildings that still stood. There was something enormously refreshing about that silence.

"We can rebuild," he said slowly. "And whatever has been said in this room goes no further. You started the business by accident, Doc—but all the world will know is that you *stopped* it! You were not to blame. . . ."

Black flushed warmly—then Mart turned aside as the girl on the divan stirred gently and opened her eyes.

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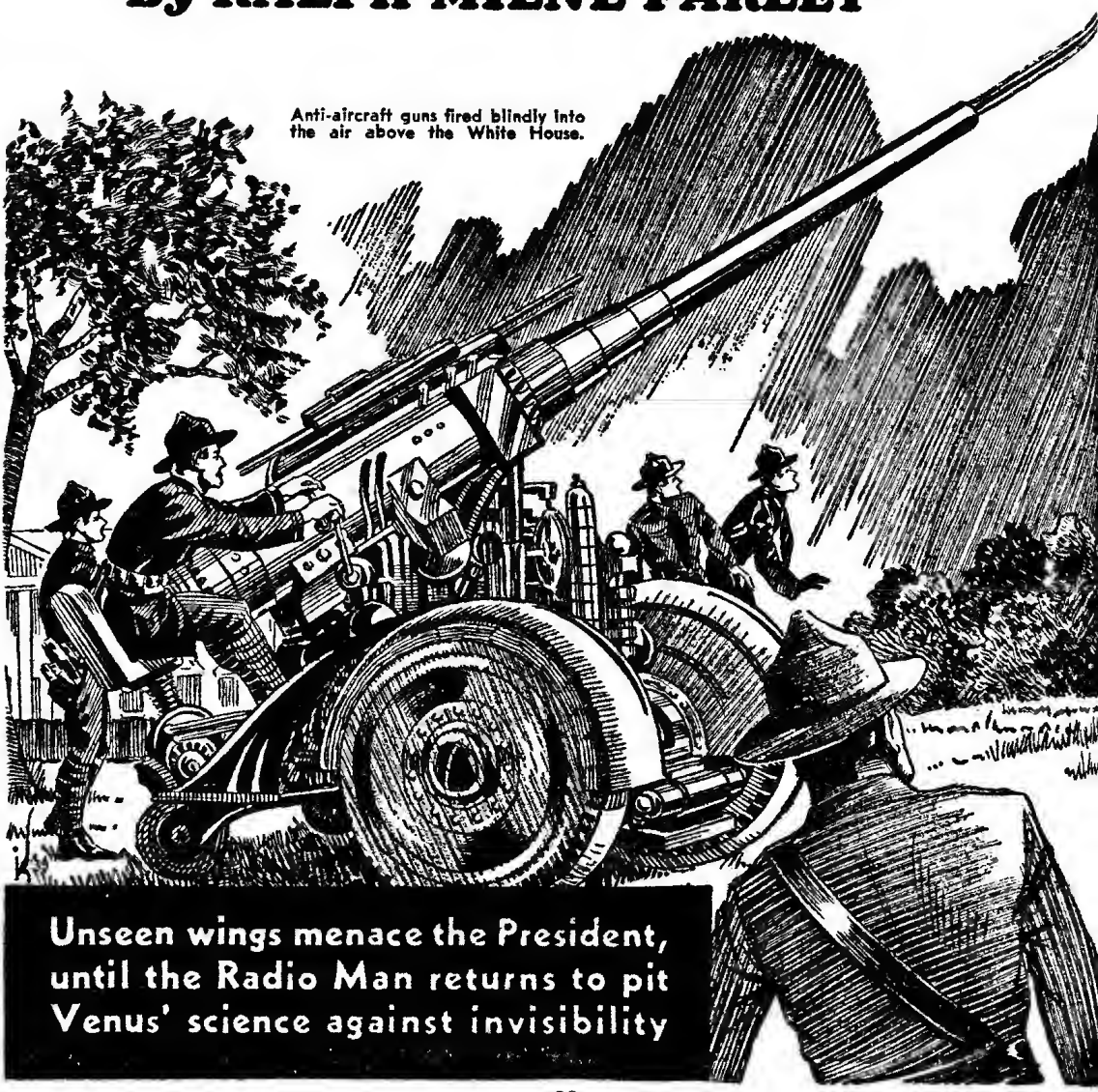
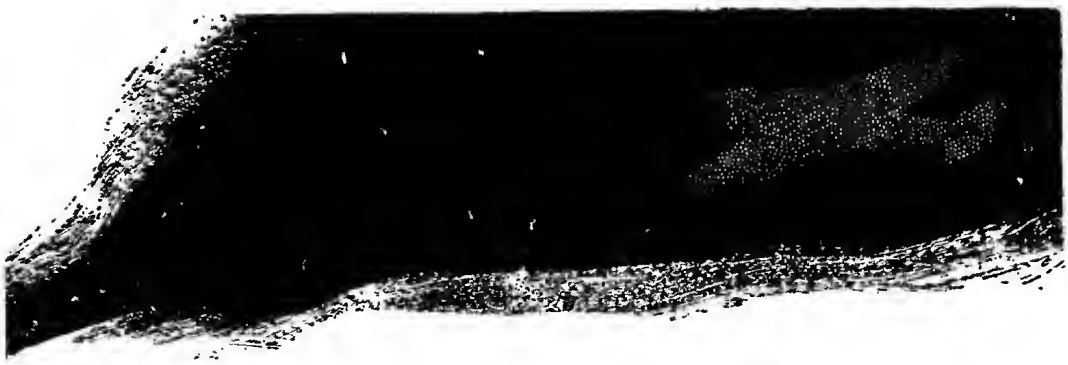
THE Radio Man Returns

By RALPH MILNE FARLEY



Unseen wings menace the President, until the Radio Man returns to pit Venus' science against invisibility



CHAPTER I
The Radio Man Returns

IMAGINE my surprise at running across Myles Cabot at my class reunion in June, 1939! The last that I had heard of him, before my interplanetary radio-set went haywire, he had been on the Planet Venus. Yet here he was, seated in the Harvard Union, reading a newspaper, and looking as keen and virile as ever!

"Myles!" I exclaimed, rushing over to him. "What's the big idea? Trying to win the long distance attendance cup away from Consul Frost of Calcutta?"

"Hello, Farley," he replied, as casually as though we had seen each other the day before. He arose, and handed over a copy of the Boston Post. "Look at this newspaper! I'll bet I can tell you how he did it."

"How who did what? Oh, I see."

Screaming headlines recounted that a bomb had been dropped on the White House lawn by an invisible airplane, which had been clearly heard, although not seen.

Morton Rust, a classmate from Wall Street, strolled by. "Watch stocks crash," he predicted. "The President's narrow escape will give the market the jitters."

But the vagaries of the stock market did not interest me. What I wanted to know was how Cabot happened to be back here on Earth again, instead of millions of miles away in space.

"You haven't told me how you got here," I objected. "How are things on Venus? How is the Princess Lilla? How is your son, little King Kew? Did the ant-men ever—?"

"Stop! Stop!" he interrupted. "Look here, Farley, aren't you more concerned with the safety of your own President, than with the welfare of a dynasty on a distant planet?—Don't look now, but in a minute tell me who is that man with a large shaggy head, standing just behind you. He seems to be snooping on us."

I swung slowly around. Then turned back and replied, "It's Sedgwick. Surely you remember him."

"Mixed up in some foreign government, wasn't he? I ran across him several times in Detroit, but couldn't quite place him.—O, Sedgwick!"

But our leonine classmate moved away, not hearing—or pretending not to hear.

"Let's take a walk through the College Yard," Cabot suggested, folding the newspaper and cramming it into a pocket of his Norfolk jacket. "I've something to tell you, which I don't wish overheard."

When we were out on the grass beneath the elms, with no other classday group within fifty feet of us, Cabot continued, with lowered voice, "Ralph, this thing worries me. Oh, I know that the authorities try to laugh it off. They say that there must have been a plane, and that the bomb-dropping must have been an accident. But—mark this—any

bomb carried by an Army or Navy plane would be easily identifiable from the fragments, and yet none of the news-dispatches mentions the type-number of the bomb. Doesn't that seem—?"

In the distance a newsboy could be heard crying an extra: "Read all about it! Invisible plane drops another bomb. Read all about it!"

Cabot stopped abruptly, listened, and then with a sharp "Come on!" led the way out to the Square, where we purchased two papers. As before, the plane had been heard but not seen. And I noticed that the AP dispatch, although mentioning that the fragments had been turned over to the Ordnance experts, gave no intimation as to the type of the bomb.

"Well?" I asked.

"I'm going to Washington," Cabot announced. "For although I'm a naturalized Cupian, I'm still an American at heart. I've seen the same stunt pulled in Cupia, on Venus. We must save the President."

"We? Then you'll take me along?"

"Why not!"

"And, now that you're talking why-nots, why don't you *phone* your information to the F. B. I.?"

"Wires may be tapped. I tell you, I've been followed and spied upon, ever since I started designing that special car of mine. A big black sedan trailed me here, all the way from Detroit."

"What special car of yours?"

"It's a long story. Tell you later.—Look!"

Our shaggy-maned classmate, Sedgwick, had come out of the Yard, and was staring at us frowningly.

"There, you see," Cabot continued, a worried look in his clear blue eyes. "Are Mrs. Farley and Jacqueline here with you?"

I shook my head. "Still down on the farm at Chappaquiddick."

"Then come on. We'll get in my car, as though to go just for a short drive. Not check out, or anything. Of course, we'll be followed, but maybe we can give them the slip."

I NODDED eager agreement. It was going to be much more exciting to *live* a story, then just merely to *write* one. So we strolled casually over to the Church Street Garage, and took out his 1939 Olds.

As we started slowly enough toward the Fresh Pond Parkway, Cabot frowned sadly. "I hate to yield that long distance attendance cup to Frost of Calcutta. — But perhaps they'll award it to me posthumously."

"You mean 'in absentia'," I answered, shuddering slightly.

"Look back," said Cabot.

I did so. A car with a New York license was following us.

"Note the number," my friend commanded.

We drove aimlessly around the pond, then headed back toward Cambridge. The New York car still followed. Then Cabot headed for Highway 1.

In the highway traffic we lost sight of the car. We stopped for lunch. When we came out, there stood the New York car beside ours. From there on, Cabot stepped on the gas. But no one seemed to follow.

We cut over into Connecticut, and had to slow down for their strict speed laws. We took to a back road, paralleling the main highway.

And then it happened!

A totally strange car pulled past us from behind, and then tried to force us into the ditch. The man beside the driver held an automatic out the window.

"Remember, it was self-defense," Cabot snapped, as he pushed one of a row

of buttons on the dashboard.

A double explosion! The other car veered off, and crashed into some trees to the left of the road.

"One-pounder cannon. High explosive shell," Cabot explained.

I turned and looked back through our rear window. A man with a machine-gun was scrambling out of the wrecked car. Then, with a rattling roar, our rear window became spattered with cob-webby rosettes.

"Bullet-proof glass," Cabot chuckled.

"But how about your tires?"

"Inflated sponge-rubber inners." He pushed a second button on the dash. Only one explosion this time. "Missed him!" A second explosion far to the rear.

Cabot pushed a third button, then turned off into a side road. Behind us hung a thick pall of smoke, obscuring our detour.

We reached the next town without event, and pulled into a garage, where Cabot inspected the rear tires. Badly ripped they were, but still holding up. Cabot asked to have them changed.

WHILE this was being done, another car of the same model as ours came in for some minor adjustment. It bore New Hampshire plates, was covered with Dartmouth banners, and contained two very personable looking young men.

The garage attendants finished with both cars at about the same time. Cabot beckoned to me, and we walked to the front of the shop and peered out, up and down the street. Just beyond the garage stood the New York car, which we hadn't seen since morning.

"Um," said Cabot, and his blue eyes narrowed. Then he strode back to the two Dartmouth men, and drew them into a corner. "Where are you headed for, fellows?" he asked.

"What's it to you?"

Cabot grimly drew a card out of his pocket, and flashed it at them.

"Oh!" And their jaws dropped.

"You haven't done anything." Cabot smiled engagingly. "But I and this other G-man here want some help." They brightened eagerly. "We are being followed by a New York car containing criminals. You've heard of The Man on Long Island?" They nodded. "Well, they're henchmen of his. I want you to change numbers with us, go out of here and head south. They'll follow you, and we'll follow them. When they stop you, we'll take them by surprise. "Are you game?" They nodded again. "But it will better fit my plans if you can elude them entirely; only don't get pitched for speeding."

While they were changing the number-plates—and shifting their college flags onto our car—Cabot drew the garage man aside, and flashed his card again. "As soon as both our cars have left, phone the local police, give them the Michigan number which is being put on these young fellows' car, and tell them that a New York car—my friend here will give you the number—full of gangsters is after the Michigan one. Tell the police to follow it, and arrest the gangsters. But, don't, on your life, mention my car or where I've gone."

The Dartmouth men warmly shook hands with us, and departed. From the front of the shop, we saw the New York car start up in pursuit. We hurried to our own car—and Cabot backed it out the rear door of the garage.

"But you said—," I began.

"—that I'd follow and protect them? Yes. But the local police can do that for me. Meanwhile we'll be giving the enemy the slip."

"You never told me that you were a G-man!"

"I'm not. That card is merely a night

pass to the Federal Bureau of Investigation. I counted on the Dartmouth fellows reading only the heading on it."

Now that we were temporarily free of our pursuers, I again queried Cabot as to how come he was here on Earth instead of still on Venus. We compared notes, as we drove along.

TOWARD the end of 1938, I had received a letter from the Radio Corporation of America, informing me that a patent application of theirs had been rejected by the U. S. Patent Office on the strength of a complete description of identically the same apparatus in one of my three published novels about Cabot's adventures on the planet Venus.*

This letter from the R. C. A. had gone on to inquire whether there actually was such a person as Myles Cabot, and whether his recorded adventures on Venus were the truth. Of course, I had answered yes to both questions.

The next development had been a visit from a group of R. C. A. engineers at my Chappaquiddick Island farm off the Massachusetts coast. They wanted to see the remains of the huge radio set which Cabot had built there, and which he had used to transmit himself back to Venus, and with which I had kept in touch with him for a short while after his return, until it had inexplicably ceased to function.

The outcome of their visit had been their purchase from me of the remains of the set, and all the notes and blueprints which Cabot had left. I had felt rather guilty about having messed-up their patent, and so let them have all the junk for a mere song. Furthermore my barn needed repairing.

Then I had dismissed Cabot from my mind until I had unexpectedly run across him yesterday morning at the class reunion.

He now explained that the Radio Corporation had repaired the radio set which they had bought from me, had thus reopened communication with Venus, and had finally persuaded him to transmit himself to earth again.

After some research work for the R. C. A. in the early spring of 1939, Cabot had gone over to General Motors to help them design a special car for the Federal Bureau of Investigation, which was the car he now was driving.

Hence the bullet-proof glass, the one-pounder cannons, the sponge-rubber inner tubes, and the smoke-screen, all of which had come in so handy in our encounter with the ruffians who had attacked us.

CHAPTER II

Danger to the President

CABOT'S ruse of interchanging the number-plates proved highly successful—at least so far as *we* were concerned. We drove all night, and reached Washington intact the next morning. The newspapers carried an account of the car which we had shot up, but no mention of any similar occurrence in that vicinity; so we concluded that the Dartmouth two had avoided trouble. Probably they had been followed clear to their homes, before their pursuers discovered the impersonation. A later check-up verified this.

Cabot reported at once to head G-man J. Edgar Hoover at the Department of Justice Building, and turned over the car. Then the two of us set

* In spite of the inviolate rule of secrecy which enshrouds the U. S. Patent Office, we have good evidence to believe that this statement is an actual fact. Holland's patent on his submarine was similarly invalidated on the strength of Jules Verne's "Twenty Thousand Leagues Under the Sea."—Ed.

out for the White House.

On the Avenue in front of the Justice Building, whom should we run across but our financier friend, Morton Rust!

"Fancy meeting you two here!" he exclaimed, holding out his hand.

"Why aren't you still at the reunion?" I inquired.

"I might ask the same of you. But the fact is I received a sudden call from the Treasury Department about helping to swing a new issue of short-term notes. And you?"

"You don't happen to have seen our classmate Sedgwick around here, do you?"Cabot interjected.

"No. Why?"

"Oh, merely that he seems to be the most ubiquitous member of our Class," Cabot laughed. "But, look here, Rust. I've got an idea which I've been mulling over in the back of my mind all the way down here. It was suggested by your remark in the Harvard Union yesterday morning about the effect of the White House bombings on the stock market. Farley and I are on our way to the White House right now by special invitation to discuss the matter. Would you mind coming with us? It's just a hunch, but I believe you could help."

The eyes of our stock-broker friend glowed eagerly. "Would I! It would be killing two birds with one stone: helping to solve the mystery of the invisible plane, and perhaps giving me a drag with the Secretary of the Treasury. Sure I'll come."

"There'll be more than birds killed, if we don't hurry," Cabot commented grimly, as he hailed a taxi.

THE President was awaiting us in the Blue Room, and with him were several experts from the Air Corps and the Technical Staff of the Ordnance Department. Of course, they had all heard of Myles Cabot the Radio Man, greatest scientist of two worlds, but had always regarded him as more or less of a myth—like Burroughs's Tarzan. Even after actually meeting him and shaking hands with him, they still kept glancing at him incredulously and furtively throughout the entire conference.

As soon as the introductions were over, Cabot waved aside all compliments, and got down to business. First he asked if the bomb fragments had indicated that the bombs were of government make. On receiving the expected negative answer, he told of the two cars which had followed us, one of which we had so successfully shot up, and of their accurate track of our whereabouts, until we had given them the slip by swapping license-plates with the Dartmouth men. This seemed to indicate that a rather far-flung organization was behind the bombings.

"Which rules out the hypothesis of a crazy scientist," the President commented. "Do you suppose that it is the work of some foreign power, or of some subversive organization?"

"I rather think not, Sir," Cabot replied, pursing up his lips and narrowing his eyes. "You have not received any threats on your life, or any specific demands, have you?"

"Yes, I have." The President handed over a typewritten note. "This just came in by mail this morning."

Cabot frowned, as he took the piece of paper. He read aloud:

"Mr. President, I am concerned with your safety. Leave the White House at once, making public statement that you have done so. If you stay, I shall bomb the White House, and this time I shall not miss. If you leave, and omit to publish the fact, I shall follow you and destroy you. Only by obeying my orders, can you be saved. (Signed) Wings over Washington."

Cabot brightened as he finished reading.

The President smiled a wry smile. "I am something like a ship-captain, gentlemen. Of course, I cannot leave the bridge."

"Is America sinking?" Morton Rust asked with a slightly malicious tinge to his tone.

The President flashed him a quick glance of annoyance.

I hastily interposed, "Don't mind Morton, Sir. He's an economic royalist."

The President's booming laugh relieved the situation.

"IT all fits in with my theory," Cabot announced. "That's why I brought Mr. Rust here. Morton, tell them how this latest development will affect the stock market."

"Well—um—you may not all agree with my theories, but I've a reputation as a fairly successful trader. When it becomes known that his Excellency does not intend to leave the White House—"

"It will *not* become known," the President testily interjected.

"Begging pardon, but it will. There is a leak here somewhere. Undoubtedly the contents of that quaint billet-doux which Mr. Cabot has just read to us is already known on the Street. Well, as I was saying, when it *leaks out* that the President is not going to leave the White House, the market will *drop*. When he *announces* it, the market will *rise*."

"I don't get the first," said one of the Army officers, "but the second seems natural enough. Of course, the market will be reassured by our President's courage."

"Quite the contrary. Market-shaking events, unless *wholly* unforeseen, always have an effect exactly opposite to what an amateur would suppose; for the full effect of the news has already been discounted by insiders. Then, just before the news becomes public, and the lambs rush in and try to profit by the news, the insiders unload or load up, as the case may be, and the market moves just the opposite from what one would think it would."

"Well," said the President, "even assuming that there *is* a leak in my official family, how does that help us solve the mystery of the bombings?"

"Very simple, Mr. President," the stockbroker replied, "and I believe that this is what Mr. Cabot has in the back of his mind. Have the F. B. I. check-up on all large buying and selling orders (say, of over a thousand shares) of all rapidly fluctuating stocks, and trace these to their source. My own firm will be glad to cooperate, and I shall be glad to keep in touch with you."

Cabot nodded emphatically.

The President fixed Morton with an intense but disarming stare. "Of course," he boomed, "you will give me your word that you and your associates will keep out of the market yourselves, so long as you are in touch with us."

"Certainly, Mr. President," Morton replied in an aggrieved tone.

"And now, Mr. Cabot," the President continued, "I understand that you have a theory as to how these bombings are being accomplished. Something fourth-dimensional, I suppose?"

"Not at all," Cabot laughed. "Something much more simple than that."

"But what?"

"Please, Sir, let me combat it first, and explain it afterwards."

"All right! All right!" a bit testily. "What are your plans?" Then, grinning engagingly, "Remember, I'm to be killed tomorrow afternoon, I believe."

"In view of the White House leak, Mr. President, I prefer to discuss them with you and Ralph here, alone."

So the President waved the others out of the Blue Room, and the three of us got down to business.

"DID you know," Cabot promptly began, "that sound travels with the speed of light?"

"Does it?" The President frowned, removed his glasses with his left hand, and pinched and massaged the top of his nose with the thumb and forefinger of his right. Then, from the inexhaustible storehouse of his memory, there came, "It seems to me that I was taught at college that light travels at 186,000 miles per second, whereas sound travels only 1,100 feet. Isn't that why one sees the lightning before one hears the thunder?"

"Yes. But there is also a little-known scientific principle that every sound wave has two phases, like for example, the electrostatic and the electromagnetic phases of a radio wave. Only, whereas both phases of a *radio* wave travel at the same rate of speed, the two phases of a *sound* wave travel at two utterly different rates. We are all accustomed to the phase which we pick up with our ears. The other has only recently been discovered by Cupian scientists on Venus—perhaps it is not yet known on Earth. It is electrical in its nature, and hence travels with the velocity of light. The situation is just as though there were a microphone and a radio transmitting set located at the source of the sound; we would pick up the audio-frequency long before the sound itself reached us."

"Very interesting, I am sure," the President drily remarked, "but just where is that getting us?"

Cabot held up one hand in mild protest. "Ordinary Army sound-detectors aren't very satisfactory to locate an *unseen* plane; because, first, you can't get an accurate intersection due to the slow speed of sound, and besides there are different distances between the two or three receivers and the source. Secondly, even if you did get an accurate intersection, the plane would be quite somewhere else by the time we got it located. But, with my device for picking up the speed-of-light phase of the sound wave, we can get an instantaneous location of the plane just as though we were training telescopes on it."

"Sounds fishy to me," said the President. "Well, Mr. Cabot, what do you propose?"

"Give us a room here in the White House as a work-shop. Keep our presence here a secret. I'll make out a list of supplies which I need; get them just as quickly as you can, for we'll have to work fast. Provide a secret-service escort for my friend here and me. We'll put up at the Hotel Washington, and rest up from last night's ride until you phone us that everything is ready. Meanwhile, have the F. B. I. check up on the stock market—and on the whereabouts and activities of our classmate Sedgwick."

"What have we got to lose?" laughed the President, genially, holding out his hand.

WE left the White House under escort. But, before turning in for a nap at the hotel, we took a taxi to the garage of the Department of Justice, and removed the door-lock from Cabot's car. Then bought some pajamas and toilet things.

Morton Rust took a room near ours on the same floor, and was likewise assigned a Secret Service escort.

I was dog-tired. It seemed as though I had scarcely hit the pillow in our double room at the hotel, when the phone rang. We had slept for five hours, and our supplies were ready for

us at the White House.

Snatching a brief lunch in the Coffee Shop, during which we read in the afternoon papers that the stock market had taken an unexplained dip, we hastened to our new laboratory. The G-men reported that Sedgwick could not be located.

Cabot's first act was to remove the lock from the door of our workshop, and substitute the lock which he had taken from his car. "Another gadget," he explained. "A fanciful conception of my own. Note these two keys: one is full-length and the other lacks the tip —looks as though it were broken off. Either will unlock the door, but the long one will also release a flood of sleeping-gas. I'll give you one of the *long* ones." Then, as I raised my eyebrows, his blue eyes twinkled and he added, "But, of course don't ever use it."

Then we plunged into work building a sort of combined telescope and radio receiving set hooked up with an ordinary sound-ranger. I never did quite master the details. All that Myles would say in explanation was, "The sound-ranger will give us the general direction—or, should I say, *ex*-direction, of the plane. Then we can advance the telescope, and pick up the fast phase of the plane's sound. I must build *three* of these. Then if we hitch them up to the ordinary Sperry fire-control apparatus of a battery of anti-aircraft guns, just as though they were ordinary telescopes, we can bag the plane just as though we could see it."

"But why *can't* we see it?"

"I have my theory. But it really isn't pertinent to our present problem, and I don't care to risk my reputation with prophesying. We'll check, when I shoot it down."

We worked all night, and *half* completed *one* of the new instantaneous sound-rangers. In the morning papers, Walter Winchell's column announced the following: "A certain exalted individual, who is mortally afraid of having eggs laid on him, is said to have called into consultation a crack-pot swami (who claims to have come from another planet). Swami thinks he can catch hen. Government by hunch, we call it."

STOCKS rose. Our market expert, Morton Rust, grinned knowingly as he explained to our little inside group at the White House, "The swami yarn was all over Wall Street yesterday, demoralizing the market. Then, when Winchell sprung the story, there came the inevitable reaction. Fundamental principle of stock-speculation: bark always worse than bite."

An anti-aircraft battery was moved onto the White House grounds. Shortly after they had unlimbered their equipment, the sound of an invisible plane could be heard. I ran up out of the laboratory to see the show, but Cabot kept on working. Frantically the old-fashioned sound-rangers, with their four huge funnels, were traversed and laid to pick up the sound. The keenest officer minds of the Coast Artillery and Technical Staff trained their blind telescopes by guesswork on the vacant blue ahead of the apparent source of the sound. The batteries opened fire, with well calculated dispersion, on absolutely nothing.

Then from above a bomb dropped with exact precision upon one of the guns, wiping out it and its crew. The invisible bomber passed on to the northward.

Stocks crashed. A letter arrived at the White House, ordering the President to get rid of Myles Standish Cabot at once, or face the consequences. And, although no one but the Presi-

dent, Cabot, and I knew of this latest communication, stocks dipped still lower.

"This seems to eliminate both Rust and the supposed White House leak," said Cabot, as he redoubled his efforts.

"What! You suspect Rust?" I asked.

"I *did*. But this leak must have come from the bomber himself. I'm afraid the President is in for it. For it'll take at least two more days to complete my other two sets."

"Couldn't he leave secretly, and pretend to be still here?" I hazarded.

But Cabot shook his sandy head. *"If* there is a White House leak, it would do no good." Suddenly he stiffened, his face lit up, and his blue eyes sparkled. "By the Lost Religion!" he exclaimed. "I have it!"

"What?"

"I'll catch him with *one* set of apparatus. Listen here. There are always slight sound-variations in the purr of a motor, no matter how carefully it is tuned up. We'll get a two-pen chronograph and record the sound tracks of *both* phases. Wherever we see a characteristic break in the track, we can make a micrometer measurement on the two recorded tracks. Knowing the constant difference between the velocity of each of the two phases, this will give us the exact *distance* of the plane. We have its instantaneous *direction* from the radio-telescope. Distance and direction uniquely determine position. We've got 'em licked with *one* apparatus. Come on."

He hastily scratched out a bill of materials. "Send this over to the Technical Staff," he commanded. "And tell the President that, by late tomorrow, the White House will be impregnable. I hope that *this* leaks out, and reassures the country."

It did, and stocks rose again.

CHAPTER III

Myles Cabot Disappears

THAT evening, with the new apparatus still uncompleted, Cabot insisted on a rest. His hands were shaking, and he appeared very nervous. So, in spite of all that was at stake, I did not argue with him. We returned to the Hotel, had supper, and went right to bed. I promptly passed out, and did not open my eyes again until it was broad daylight.

Cabot was gone from his bed! My first thought was: "Kidnapped!"

Without bothering even to shove my feet into my slippers, I rushed into the adjoining room, where slept our Secret Service body-guard. Instantly one of them covered me with his automatic.

Then laughed, "Oh, it's you, Mr. Farley."

"Where's Myles?" I demanded.

The man grinned. "No cause for alarm. He left for the White House before daybreak."

"Under guard, I hope."

"Certainly."

I sank into a chair. Then rising and dressing as hurriedly as I could, I rushed to the White House. They said that Cabot was in our laboratory.

But, when I reached the place, it was locked. No one answered to my rap on the door, and my call of Cabot's name. I snatched out my key.

Then remembered.

Something hard and round dug into my ribs from behind, and a harsh voice rasped in my ear, "Don't make a move or a sound."

I tensed myself, and my mind began to race. "You wouldn't dare to shoot. The guards would come running."

"Oh, no, they wouldn't." My unseen captor laughed harshly. "My rod has a perfect silencer. Be quick about

it! Open the door!"

I thought, "Perhaps the gas will get him, too." So I quickly inserted the key in the lock, and turned it. A sweet pungent odor flooded over me.

As I slumped weakly to the floor of the corridor, I twisted around to observe the effect on my captor.

But he had stepped back out of the range of the gas. Nor could I identify him, for a bandana was tied across his face.

WHEN I came to my senses again, coughing, reeling with nausea, I was lying handcuffed on a couch in the Blue Room, with a Medical Department Major kneeling beside me. Standing by were the President, Morton Rust, and two of my Secret Service bodyguard.

The President's face was grim and set. "Well, Farley," he said, "I guess we've spotted the White House leak at last. Cabot warned me that you were not to be trusted. Why were you trying to enter his laboratory in his absence?"

Still reeling from the effects of the sleeping-gas, I swung my feet around and sat up dizzily on the couch. "I was looking for Cabot," I moaned.

"A likely story," Rust cut in harshly.

"Where is Myles?" I demanded.

"I don't know," the President replied. "He left the building under guard—destination unnamed."

"But we've *got* to find him. Some one held me up with a revolver and made me open the laboratory door. Whoever did it, has probably wrecked our almost completed apparatus. The White House is again at the mercy of the invisible bomber, and this time he will probably bomb the White House itself."

"You ought to know," Rust grated.

"We've got to find Cabot!" I persisted. "There is no time to lose. He will vouch for me."

"Thinking first of yourself, eh?" Rust laughed grimly.

"This is no laughing matter. Take my key, somebody, and see if my assailant didn't wreck all our apparatus. I couldn't have done it, for I fainted from the gas before I got in."

"And now you want us to be gassed, too?" the President sarcastically asked.

"I'll open it myself."

"It would be safer for all concerned," said the President, "to keep *you* away from the laboratory. The apparatus is safe, for *you* didn't quite reach it. And we'll leave it strictly alone, until Cabot returns."

The telephone rang, and the President answered it. I heard him give his version of my arrest. Then, still holding the phone, he turned back to us with, "It's Cabot. He says he'll be back in a couple of hours. He seemed relieved that his gas-lock kept you from getting in."

"Two hours!" I moaned. "Hell will be popping before then. Let me speak to him."

"You'll speak to no one," the President snapped. He hung up.

"Where did Cabot call from?" I persisted.

The President's face fell. "I didn't ask."

"Have it traced! Please! Think of America!" I begged.

"I *am* thinking of America." Then, to the two Secret Service men, "Take this fellow over to the State War and Navy Building and lock him up."

So, kicking, struggling, and protesting, I went. Where was Cabot? Would he return in time? But, even if he returned, what could he do, with our apparatus all smashed?

Yet, such was my confidence in the Radio Man, that I felt he would do something effective, if I could but reach

him and give him the facts. His mistrust of me pained me even more than the stubbornness of the Chief Executive.

ABOUT an hour and a half later the guards came for me, and told me that the President had sent for me. Perhaps he had seen the light. Perhaps he had gotten in touch with Cabot again. Perhaps it was not too late.

But, as I and my guards entered the driveway of the White House, we heard far to the southward the burring roar of an airplane motor. And the blue sky was devoid of any plane to have caused that noise. The three of us halted and gaped.

Soldiers came piling out of their tents on the White House lawn, whipped the tarpaulin off of a three-inch gun, took their stations, and began swinging the gun around in the general direction of the oncoming invisible menace.

Futile gesture! What could they do without Cabot?

Now the planeless sound was almost over the White House.

"Commence firing!" shouted the Lieutenant in command.

The cartridges began passing rapidly from hand to hand, the nose of each shell being poked into the fuse-setter beside the gun and twisted, just before being inserted in the breech.

"Crack — crack — crack," came the ear-splitting staccato explosion of the gun, as its barrel slid backward and forward with rhythmic cadence.

With the same cadence a cluster of puffs of cotton-batting smoke began to appear, one by one, in the distant blue above. The putt-putt-putt of these little shell-bursts was wafted down to us.

And then suddenly we saw the shape of a huge bombing-plane, a twisted and torn silvery shape, with parts flying away from it, hanging in mid-air above the White House.

As this mass of wreckage hurtled toward us, we ducked and closed our eyes.

"Cease firing!" shouted the Lieutenant.

Next we heard, as we cowered, the "boom" of the bursting plane—its own not-yet-released bomb had evidently been hit—and then the crash behind us, as the wreck landed on Lafayette Mall.

We sprang to our feet again, and stared around. A crowd of men were running down the front steps of the White House toward us. And among them was Myles Cabot.

The rest rushed past us toward the now-burning pile of wreckage, but Cabot stopped by me.

"Awfully sorry, Ralph," he panted. "But I had to use you as a decoy. My apparatus was finished early this morning and moved out onto the lawn, and hitched up to the fire-control. We almost caught the fellow who gassed you, but he got away. So we figured that he would make an immediate and final bombing attack, while he thought we were still unprepared. Hence our false accusation of you."

I grinned with relief. "Glad to have been of service."

"Well, our job is over." Then, to my guards, "Take off his handcuffs."

WE entered the White House. Cabot seemed to have lost all interest in the fallen plane, on which fire-engines were now playing streams of water.

The President received us, thanked us warmly, and apologized to me profusely with a twinkle in his eye.

Morton Rust was there. "The stock market will boom," he announced, "for this is a case of unexpected news, and there was *no* leak this time. The market had dipped to new lows just be-

fore the attack. Too bad the poor fellow who lies burned to a crisp over across the Avenue won't be able to cash in on the rise." His voice sounded bitter. Then he grinned. "Sorry, Ralph, that I had to join in the denunciation of you a short while back."

"You're a darn good actor!" I exploded.

"Well," Cabot announced, "I'm going back to the Hotel, and catch up on some sleep. And what a relief not to be dogged by guards any more!"

As Myles and I strolled back alone to the Hotel Washington, I asked, "And now tell me the secret of the plane's invisibility."

"Very simple. We used the same stunt on Venus in one war there. The entire surface of the plane was a carefully rounded mirror, so that all one could see when looking at it was the reflection of the sky beyond. That is why the plane only flew in absolutely cloudless weather."

We bought some special editions—"Extry! Extry! All about the bomber"—and went up to our room. I felt let down, and slumped into a chair. Cabot, too, sat down, but seemed unable to relax—he had been under too much of a strain, I suppose. After all, the responsibility all through had been his, not mine.

For a while we read our newspapers in silence. The market had already begun to soar. The body in the plane had proved absolutely unrecognizable—but had been shipped over to the laboratories of the F. B. I. for measurement of the bones and study of the teeth.

"Was it Sedgwick, I wonder?" I asked.

"We'll know it was, if he is never seen again," Cabot replied. "But I rather imagine that the flyer was not the real party at interest. Poor man! He was probably just a tool."

I SNAPPED out of my lethargy. "Then why are we sitting here unguarded? We are less safe now than at any time since we left Cambridge!"

"I'm well armed," Cabot laughed. "My bag of Cupian tricks is not yet exhausted. Suppose you run down to the lobby and buy a late edition. When you return, knock three times and give your name. I'll sit facing the door, and keep my eyes open." He took a forty-five out of his pocket, and toyed with it.

"By the way," I asked, "did the check-up of the Stock Exchange produce any clues?"

Cabot shook his head. "We made the mistake of setting a $1,000 share limit. News of that fact must have leaked, too. The guilty man must have operated under several aliases, and always at lower figures. Now run along and buy your paper. I'll be all right."

I returned, reading the paper as I plodded down the hotel corridor. Absent-mindedly I rapped three times on the door of our room.

It was flung open in my face, and I found myself staring into the muzzle of a revolver, around which bulged the vanes of a Cutts silencer. The face behind the weapon was masked. Behind him stood another man, back to us, covering the motionless seated figure of Myles Cabot. Cabot had evidently forgotten his promise to me, for his chair was turned to face the window, and only the top of his head was visible from where I stood.

I wondered if he still held his forty-five, and whether he would risk using it.

"Will you please to step into the room and close the door softly behind you," commanded a suave voice, quite different from the harsh tones of the man who had trapped me at the laboratory. I did as directed. "And now will

you please to stand over there by the window." I started to obey, keeping a wary eye on the gun which menaced me.

"Get up, damn you, Cabot!" the other intruder rasped. "I told you that once before, and would have shot you by now for disobeying, only I wanted to wait until your friend came back. Stand up, damn you, and stick up your hands."

By this time I had reached the window, and was standing beside Cabot's chair, my eyes still glued to the weapon of my captor.

"Anything to oblige," spoke Cabot's cool voice, from the closet-door behind the two men—*not* from the chair where he seemed to sit. Don't look now, but I have both of you covered. And I have already rung for the G-men, who have been waiting in the next room. That's only a clothing-store dummy in that chair. Farley, take their guns."

I did so.

"Now snatch off their masks."

I did that, too. The one with the harsh voice was our classmate, Morton Rust. The other was a stranger.

"I suspected you nearly from the start, Morton," Cabot continued in a level tone, tinged with sadness, as the Federal operatives entered and shackled the two men. "The stock market reacted just a bit too perfectly."

Hale fired hastily upward, and a pair of bullets found their mark.

BRIGADE of the Damned

By ED. EARL REPP

Somehow Klamper, discredited scientist, knew the answer to this deadly plague, and Hale fought to clear his name.

CHAPTER ONE

A Call from the Dark

KLAMPER had not walked half a dozen blocks when he knew he could stand no more. In a terror born of his own conscience, he stumbled against a lamp post and covered his writhing face with trembling hands. A sob of unutterable horror convulsed his unkempt, elderly figure and his throat ached with emotion.

Even tight-clamped eyes could not blot out the horrible night mare that engulfed him. The rumble of those ghastly trucks pounded on his eardrums like distant thunder. The frightful wailing of sirens chilled him to the marrow, adding to the tumult of his inner soul. In his troubled mind was a monotonous accusation that kept challenging him: "You could help, Klamper! *You could help if you only would!*"

Arnold Klamper tore his eyes open again and stared at the frightful scenes about him. Main Street, Los Angeles, center of the honkatonk district, was a sordid enough place ordinarily. But tonight it was a scene transplanted from Medieval London during the Dark Ages and the Black Plague.

Even as he watched, trucks lumbered past loaded with grisly burdens . . . figures that lay in shapeless masses of arms and legs. The street lamp poured sudden brilliance over them and threw the sight of yellow skin and gaping mouths at him.

"The Yellow Plague!" Klamper muttered. "Why don't they stop it? *God!*"

His gaze reeled across the street as a man stumbled from a doorway to sprawl across the curb with his head and arms dangling in the gutter. He was ignored by the sparse crowds. Most of them were too sick or drunk to care. Klamper felt a cold hand clamp about his vitals as a dwarfed figure scuttled from the shadows to go hurriedly through the unconscious man's pockets.

The horrible similarity between these sights and those of the seventeenth century in England ate into his mind.

It was small consolation to the terror-ridden metropolis that the unknown disease which had seized hundreds of persons in the past six days was a yellow plague instead of black. Certainly every other likeness was there.

Taken completely without warning, city health officials had been powerless to stem the rising mortality list. Rich and poor alike, those living in the slums or luxurious residential districts, were victims of the blindingly swift bone dis-

ease that turned healthy bone tissue to pulp and killed in ten hours. In the first two days of the plague, three hundred died. Tonight the total stood at four thousand.

Ambulances were incapable of taking all the stricken to the overflowing hospitals or the dead to mortuaries. Uncared for and ignored, victims might feel the first gnawing pangs at noon and be dead before midnight. Ordinary trucks had to be called in to take the dead to improvised burying-grounds. Like shapeless masses of yellow dough, as boneless as protoplasm, they were heaved in by terrified drivers.

Physicians and scientists had given up. Without a single recovery recorded, with no symptoms identified, they could only wait.

A sort of insanity took possession of the city. Crime and vice ran amuck. Streets which had been crowded with business men and shoppers were given over to drunken revelry and insane debauch . . . both spawned by fear. Day ceased to exist; Los Angeles was a city of ghastly night.

AND through the scenes of horror stumbled Arnold Klamper, his seedy clothes, long gray hair, and care-lined features hiding the brilliant mind that was his. The old scientist had ideas about this awful destruction, theories that might stop it, if he were right . . . but he had every intention of dying with those ideas.

Ten years ago, when he was the most famous bacteriologist in the country, the city had scorned and ridiculed him. They had branded him a butcher of children, because his discovery, that might have saved thousands from the ravages of infantile paralysis, had killed ten, instead.

How could he know that the serum that had straightened the poor, twisted limbs of a score of youngsters would suddenly go bad—killing ten he was fighting to save? A politics-controlled medical board, knowing he had already been selected as their head for the next term to clean up conditions in public hospitals, had seized that tragic blunder to ruin him.

Headlines screamed carelessness . . . butchery . . . negligent homicide The public took up the cry. Within a week Klamper lost his position as head of a great hospital, was stricken from the rolls of licensed surgeons, and found himself friendless

The shame and misery of those days were fresh in his mind as he stumbled down Fifth Street toward his basement quarters. He tried to see it as poetic justice, fought to keep his mind from delving into the vast libraries of medicine he had absorbed, never to forget. He had suffered before; his persecutors could do it now!

But all he could see was the endless line of hospital trucks, carrying dying men and women away. Muttering to himself, Klamper staggered down the cement steps to his rooms. Then, just inside the doorway, he brought up short, his keen eyes probing the half-light of the parlor.

Out of the shadows floated a voice that brought his head about.

"Dr. Klamper! Then I was right!"

Even before he had seen his visitor clearly, the scientist was stammering a denial: "No, you are wrong — the name is Petersen! What are you doing in my rooms? I ask you to leave, immediately!"

He snapped on the overhead lights. Then his startled vision took in the tall, slender figure of a dark-haired man standing before his worn sofa. Klamper's gaze flicked shrewdly over an intelligent forehead, keen gray eyes behind gold-rimmed spectacles, a firm

mouth and chin that relieved the rather scholarly look of the man. He held a small surgeon's bag under one arm.

And somehow Klamper knew immediately that he could not fool this man with the probing eyes. He went closer, head canted to one side. "Who are you?" he put bluntly.

THE visitor smiled for the first time, the expression seeming to lighten his severe features instantly. "Hale is the name," he introduced himself. "Dr. John Hale. I would apologize for breaking in, but these are days when most men are glad to have any visitors except the most common of all—Death."

Klamper settled himself doggedly on his large feet, thrusting his thumbs into the armholes of his vest. "I've heard of you, Hale," he ground out. " 'The Laboratory Sleuth,' or something of the sort. Isn't that what they call you?"

Dr. Hale nodded, stooping to set his bag on the floor. "That's the name the newspapers seem to prefer," he admitted, "although I'm no more of a sleuth, probably, than any other chemist or physicist. My searches just go a little farther afield."

A "little farther," stated the case modestly. Since that time years ago, when some enterprising reporter had written enthusiastically of his profession, that might have been termed "roving laboratory analyst," he had seen duty on all science's battle-fronts. The nickname "Laboratory Sleuth" stuck.

Hale's mind was a vast card index, from which he could pluck instantly any scrap of knowledge he had ever heard. The tremendous extent of his learning made it possible for him to help many of the metallurgists, archaeologists, textile manufacturers, criminologists, and the host of other learned men who called on him when disjointed facts refused to fall into place.

Hale's keenly analytical brain probed to the kernal of a problem with lightning rapidity. That factor had saved one man from death, and brought more than one criminal to justice. But there were lines, eloquent of strain, about his mouth tonight.

"How did you find me?" Klamper suddenly demanded. "I've been known as Petersen for years. No one knows I'm in Los Angeles."

Behind his spectacles, Hale blinked owlishly. "I knew you were in the city because I saw you once, three years ago, in a crowded store. Knowing that, I found you easily. A man of your mentality would find it impossible to give up his work completely. I inquired at the leading bacteriological supply houses and found I knew all their largest buyers except two or three. 'Petersen' was one of them."

"And now that you've found me—?" Klamper inquired archly.

"I've come to ask your help." The answer would have been flattering to almost any scientist in the country. But Arnold Klamper stiffened where he stood.

"Can any man have the gall, the brass, to ask me to—to help *the city that ridiculed me?"* he bit out acidly, his face working. "These are the people that ruined me, you understand—that drove me to hide here in this hole!"

"I understand this," Hale came back quietly. "Three men engineered your disgrace. All are in the penitentiary now for graft, and embezzlement of public funds. In the eyes of everyone you are vindicated now. Yet you propose to punish an entire city of two million for the crime of three men!"

"As long as I live," the older man clung stubbornly, "those headlines will be before me. The public howled for

them. For a week I even dwarfed the greatest news story in history—the landing of space ships from Venus. The welcome of men from another world had to wait while they baited me. No, Hale, it's no use. I refuse to help—even if I could!"

DR. HALE came quite close to him, studying the knitted gray brows and glittering eyes. A faint half smile drifted over his lips. "Revenge isn't the trouble with you, Klamper," he said softly. "It's fear! Fear that if you try to save sick men and women you'll only kill them!"

The old surgeon seemed to wilt a little. His eyes were suddenly haggard. "You're — you're mad!" he croaked.

Hale brushed the remark aside. "I wonder if it would make any difference to you," he brought out, "if I told you that many of your brother scientists, less gullible than the public, always believed your serum was tampered with?"

Klamper's face was white, now. His breath came raspingly. "But that would mean murder!" he gasped. "It would mean—" his voice struck a wild, eager note, "it would mean I didn't kill those children at all!"

There was a glowing warmth of sympathy in Hale's bony features as he nodded. "It's been too long ago to prove it," he said earnestly, "but not too long to demonstrate that you are still the greatest bacteriologist and bone disease specialist in the world! I came here because there isn't another mind in the country capable of coping with this yellow horror. Perhaps—perhaps you are the man! I could prate about the glory to be gained by stopping the plague. But I know nothing would mean so much to you as saving thousands from death, with the obliteration of that one error—if it was an error—as a reward!"

A tense hush seemed to compress the shabby room. Then Hale's words were dropping through it: "Will you help, Klamper?"

And the old surgeon's words, whispered and alive, came after a moment: "Yes — yes, I'll help. And thanks, John Hale!"

CHAPTER TWO

Rof Thurlo

AFTER a second, Klamper turned brusquely away, as if to hide the sudden moisture in his eyes. "I have thought some about this yellow death," he admitted sheepishly. "A few experiments, analysis of a sample of infected bone the health department gives out so readily, and—the usual things. I—let me show you!"

Hale followed him eagerly through a dingy hall to a small laboratory. His step was springy with impatience, for he sensed that Klamper had found something more important than he was willing to admit.

The room was low-ceilinged, with dusty beams almost brushing the top of Hale's head. In battered cupboards lining the walls were hundreds of bottles and pieces of equipment. The equipment was the most ancient Hale had encountered in years. But in one corner was a table covered by a glass hood, under which were more modern articles.

Reverently, Klamper removed the shield and took up a large beaker containing about fifty cubic centimeters of gleaming pink crystals. "This little jar of matter caused me many hours of labor," he frowned. "As well as I have been able to tell, it is the substance that turns the victims' bones to pulp. At

first I could not isolate it, it was so volatile.

"By accident, I exposed the vaporizing substance from my retort to ultra violet light. Immediately, these tiny crystals began to settle out of the steam! Yet they are so quick to vaporize that I have been unable to analyze them. If I could do that—"

Hale was already opening his surgeon's bag. Wherever scientists gathered to gossip, that little carry-all was famous. In it were a dozen analytical devices of the laboratory sleuth's own invention, as well as the more common varieties of equipment. High- and low-temperature thermometers, an electroscope for determining radioactivity, half a dozen expensive cameras loaded with various films, and a powerful .375 revolver were among the objects.

Hale was lifting one of his own ingenious inventions from a leather case now. Shaped almost like an automatic pistol, it had a prism in the barrel which shot diffracted light onto a photographic plate in the breach. Developed almost instantly, the plate revealed to his trained eyes the composition of the substance he had shot.

"If you'll place that beaker over a Bunsen for a moment," he clipped, "I'll see what the spectroscope says."

KLAMPER hurriedly got a burner going and placed the pink crystals on the ring-stand. Within five seconds a delicate vapor lifted from the beaker. Hale levelled the spectroscope at the pastel cloud, snapped the trigger.

Quickly, then, he operated a small plunger in the breech. In less than a minute he was drawing a thin strip of photographic paper out the bottom of the grip. He laid it on the table beneath a strong light. Their heads bumped as both bent over it to read the spectograph.

"Nitrogen!" John Hale gasped. "Pure nitrogen, in some isotopic form!" He stood grimly staring down at the little ladder of colors, his eyes on the faint "flags" beside the ordinary nitrogen lines.

Klamper reared up sharply from the table. "Then no wonder!" he blurted. "All this nitrogen from a section of bone no longer than a foot. No wonder these people die with their bones a liquid. I have seen deep-sea divers dying of 'the bends' because they had a little too much nitrogen in the blood. Yet this graph shows the dead man's body was literally saturated with the gas!"

Hale was examining the crystals curiously. "I've heard of no such isotope as this," he muttered. "Gas, in a crystalline form. . . . But whatever it is, how does it get into the body? It takes hundreds of pounds of water pressure to affect divers. Here, we are a hundred feet above sea level!"

Klamper pinched the bridge of his nose with thumb and forefinger. "If we could just find that out," he murmured. "If we knew why some are affected and others not. We drink the same water, breathe the same air—but who knows? Perhaps in the end we will all be infected, and die!"

They were silent, darkly absorbed in a vision of a city inhabited only by yellow corpses. In the hush, emphasized by the hissing of the Bunsen burner, a truck rumbled by . . .

The sound seemed to jar John Hale to action. "There is little we can do here," he protested. "Your equipment scarcely seems adequate for the problem we are fighting. I'd be honored if you would consider my laboratory yours, as long as you care to use it. I have about everything we will need . . . guinea pigs, micro-scales, furnaces. And God knows we will need it, Klamper!

This is the biggest menace any scientist has ever battled!"

THEY went out into the night streets again, into weird, unforgettable scenes. Before they reached Hale's apartments in the Wilshire district, they had seen a dozen bodies lying in the streets, ignored by the half-hysterical passers-by.

They passed Westlake Park and saw the benches held by men who sprawled on them in attitudes of complete despair. Once a car almost struck theirs as its driver either went crazy or lost consciousness. The last they saw of the car it was churning through the shrubbery toward the lake.

The apartment house was one of the most luxurious in the city, chosen by Dr. Hale for its blessed privacy. An automatic elevator lifted them smoothly from the deserted lobby to Hale's suite on the top floor.

But as they hurried into the magnificent chrome-and-glass lab, the scientist dragged to a halt. Then he was walking forward slowly towards the strange-looking man who stood by a glass wall overlooking the city.

"Rof Thurlo!" he blurted. "I hardly expected you."

He was conscious, as he watched the long, gangling figure, that Thurlo's goggling red eyes were not on him. They were racing over the elderly bacteriologist in the rear, with something like suspicion in them.

Rof Thurlo was a strange figure in the worldly setting. Born to power on the planet Venus, his body was ill-adapted to Earthly conditions.

Long, bony limbs were sheathed in heavy, lustrous black material that seemed to blend into the glassite globe shielding his head. The atmosphere of Thurlo's home planet was some twenty degrees warmer than that of the world he had been visiting and studying for ten years. Hence he wore a thick armor veined with resistance wires to keep his body always at one hundred and twenty degrees.

Inside his glass helmet, filled with humid gases, was a pinhead hardly half the size of Hale's, though the glittering, red eyes were the size of dollars. Hale was thinking, now, that it was those eyes which had first planted the seeds of dislike for Rof Thurlo in him.

And with the Venusian scientist's first words, he found his dislike rushing over him again.

CHAPTER THREE

City of Hate

"MY people grow frightened," came the guttural tones, studded by the sharp clicking of his helmet-valve at each word. "I have come for help. Many are ill."

"I'm sorry, Rof Thurlo," he said shortly. "If I could possibly help, I would. But I told you yesterday I had learned nothing."

He watched anger play with the emaciated blue lips and greenish jaws, and found a kind of satisfaction in seeing it there. Five years before, when an Oriental invasion threatened the coast, the Venusians in their city fifty miles north of Los Angeles had refused to lend the secret of their dreaded "potential energy bombs" to the government.

"Who is that?" Thurlo rasped suddenly, pointing at Klamper.

Klamper muttered angrily, impatient to be at work. Dr. Hale set his bag down with an air of finality and ground out, "The name is Petersen, though it doesn't matter. And we have a lot to do, and would appreciate being left alone."

He turned brusquely away, finding

rubber aprons for them both. Then he was brought around again as the Venusian pursued, "Perhaps I might help, if I look on. Certainly you can not mind—?"

Hale tossed an apron to Klamper. "All right! I thought your scientists might offer help when the plague first struck a week ago, but you apparently waited until your own people were affected. But better late than never. Here's an apron."

Klamper's face glowed as his eyes filled with the high-domed, shining workshop. Everything he could desire was there. He rubbed his gloved hands together. "Guinea pigs!" he declared. "A hundred of them. I must start my inoculations before another hour."

Difficulty devilled every move they made. For an hour it was impossible to dissolve the strange substance in any liquid, that the inoculation might be made. Finally Hale achieved it.

Rof Thurlo, his face valve clattering excitedly, goggled over Arnold Klamper's shoulder as the last of seven dozen guinea pigs was submitted to the test. The injections were made in the epidermis, the cuticle, the bone itself, and given in the form of gas.

The Venusian's bluish-green features writhed into a ghastly smile. "Very clever, Doctor," he complimented. "Too clever for an ordinary 'Dr. Petersen.' I can imagine no one less skillful than an Arnold Klamper employing such efficiency!"

JOHN HALE was the first to break the silence. "I might have expected this from one of your lower-class laborers," he breathed, "but from Rof Thurlo, head of a city of five thousand progressive Venusian scientists—! I take it your curiosity, for some inexplicable reason, led you to follow me to Klamper's rooms?"

Thurlo's face froze. There was menace in his ruby eyes. "Curiosity," he clipped, "is the soul of science."

"But this particular form of curiosity," Dr. Hale snorted, "seems to have curdled my hospitality. If you'll leave the apron as you go."

Just for a fleeting instant the otherworldling's hand sought the bulbous grip of his energy pistol. Then his glass-shielded head canted forward. "Certainly. But if our scientists discover anything useful, we shall be eager to help you."

Stiffly he left the laboratory.

"Like you were during the war scare," Hale muttered darkly. "Klamper, that fellow and his underlings arouse a wholesome, violent hatred in my veins. They were content to cool their heels while our people alone suffered. Now that the Yellow Plague has come closer to them, they want to collaborate with us. Even to the extent of following well-known scientists to see what they discover!"

"Odd that he should have known me," mused Klamper. "I can't see what—*Hale!*" he shouted suddenly. "Look at those guinea pigs!"

The laboratory sleuth swung his gaze to the large table, partitioned by glass plates into cubicles. Immediately he was lurching forward to seize one of the infected animals.

Already its eyes showed a peculiar amber color, its gums a pale yellow! It was breathing abnormally.

Hale crossed the room in a dozen long-legged strides. Before a small fluoroscope table he stopped, while his fingers darted over the controls. He placed the rodent on the frosted glass plate. Klamper crowded in beside him.

Then, before their eyes, a strange thing took place.

From the webs of veins that showed like tiny red threads in the animal's

body, seeped a myriad of minute bubbles. It was like watching the effervescing of champagne. The droplets melted together to form long, oval-shaped pockets; then the whole mass of bubbles seemed suddenly to settle on the guinea pig's bones and surround them in gaseous cases.

John Hale's breathing was stopped, momentarily, as he saw those tiny pink crystals begin to settle upon the slender bones. Within two minutes, the entire skeleton was encrusted with the barnacle-like formation. Nor did the activity stop there.

The nitrogen isotope appeared to eat its way into the bone tissue like an acid. Cavities appeared, then they were filled with crystals. Abruptly there was no bone left. Just an angular skeleton of crystalline threads. And even as they watched, the crystals faded and a lumpy pulp remained. . . .

SILENTLY, Hale snapped off the fluoroscope and turned a gaunt face to Klamper. The old scientist clenched his fists.

"Is it any wonder they could not find the secret!" he exclaimed. "Even I, with thirty years of analyzing bone diseases, diagnosed it as some form of divers palsy. This is something infinitely more horrible!"

"Horrible, yes," Hale murmured. "But what in God's name is it?"

Klamper's pinched eyes sought the cavy again. He was silent a moment, as if arranging his thoughts. "It is a substitutional process," he summed up finally. "The nitrogen possesses the power of disintegrating the main constituents of the bone, throwing them into the blood, and usurping their place. Once that is done, the crystals again revert to gas.

"I should have suspected something like this from the yellow pallor of the victims' skin. Nitrogen takes the place of oxygen in the blood-streams, thus breaking down the hemoglobin in the red corpuscles."

Hale broke in, "But how can we stop it? There must be a remedy."

Klamper's shoulders slumped as he went toward the dissection table. "There is no remedy," his dejected voice came back. "It is similar to 'the bends' in this: that once the nitrogen is taken into the body, it must bubble off in the blood-stream.* Unless, of course, sufficient pressure is exerted on the victim to keep the gas in solution. Such a pressure would crush a man instantly."

"I take it we've got to discover where this stuff is coming from. Prevention is our only hope." The impatient exclamation that was in his throat died there, as his glance fastened on the glass cubicles of guinea pigs.

He stalked closer, to stand staring down at the black and white menagerie. Abruptly his long body stiffened. "There's our answer!" he burst. "Klamper, look at this! Only a dozen of them have been affected. The ones we fed the stuff to through the mouth!"

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*The bends are one of the greatest dangers of diving. It is caused by the change in pressure in the depths. If a diver were to come up too fast, he would find the nitrogen in his lungs forced into his blood stream in the form of bubbles, and would be in danger of death. The treatment is simple, being accomplished in a pressure tank which imitates the pressure of the depths, and prevents the nitrogen from forming bubbles. More recently, especially in the case of Max Nohl, of Milwaukee, Wisconsin, inventor of a new type diving suit, the danger of bends was eliminated by substituting helium gas with oxygen, and eliminating the nitrogen. Since helium will not form these deadly bubbles, it was possible to disregard the usual rules of lifting a diver slowly, to allow the nitrogen to work out of his system in normal fashion. Nohl set a new world's depth record of 420 feet on that attempt. Undoubtedly, the gas used here was an isotope which performed its work much more efficiently, and without the need of saturation by pressure.—Ed.

But the bacteriologist merely shook his head. "What does that mean? That the nitrogen is entering victims' bodies through food or water. Yet all the food in the city can't be contaminated. And we drink the same water—"

"*Do* we though!" Hale broke in hoarsely. "All the water I drink, for instance, goes through a water-softening plant in the basement of this apartment house!"

A LIGHT of hope broke in Klamper's face. "And I seldom drink anything but coffee or milk — except distilled water, sometimes, when I'm in the lab, and it's handy! That could explain why some have been stricken and others not! Boiling water would vaporize the nitrogen."

"*Nitrogen!*" Hale's lips formed the word, though he scarcely whispered it. His angular jaw grew flushed. "Klamper," he breathed, "do you know why Rof Thurlo and his people have that bluish skin? Because there isn't a red corpuscle in their bodies! Oxygen kills a Venusian. Their own atmosphere is nearly a hundred per cent nitrogen, an impossible food for our type of blood. Their helmets are filled with the gas, their city is blanketed under an artificial atmosphere of it. Who would know how to impregnate water with it so well as they?"

"You aren't suggesting—"

"*I'm convinced that this is Thurlo's idea!* Kador, their city, is hardly a mile from the aqueduct where it skirts the Tehachapi Mountains. What would prevent them from poisoning the water and moving into the city when the plague had weakened us sufficiently? Why, with a start like that, they might branch out to take other cities—how do we know where they would stop?"

He swung to his carry-all and took from it the revolver he had had to fall back on more than once. His face slipped into grim lines as he pocketed the gun.

"The way to kill a poisonous plant is to strike at its roots," he gritted. "I'm going to Kador, and Rof Thurlo is coming back with me—as a hostage."

"Is that wise?" Klamper put in quickly. "Perhaps a detail of police—"

"—would bring down a barrage of Potentar bombs!" Hale interrupted. "Surprise is the important thing tonight. It's a job for one man."

Arnold Klamper shook his head. "For two men," he amended. "I may be no spring chicken, but I'm not too old to be of some use in a scrap!"

"For a misanthropist of ten years' standing," Hale chuckled, "you made the switch to altruism in an awful hurry. Let's hope the next step isn't martyrdom—for both of us!"

UNDER the black hood of a moonless sky, Kador lay like a luminous gray mushroom against the steep foothills of the Tehachapi Mountains. Through the goggles of their oxygen masks, Hale and Klamper could see it clearly as they stood in a fringe of oak trees close by.

Like enormous badminton nets, two copper screens rose on tall towers at each end of the city. Between the nets, covering the city like a thick, hot fog, was the perpetual mist of nitrogen and other gases the Venusians breathed.

The heat of the city was apparent even out here. Resistance of the heavy atmosphere to the current flowing between the two giant electrodes produced a temperature of one hundred and twenty degrees Fahrenheit. Without that stifling heat and the poisonous envelope of gases cloying the city's streets, not a Venusian could live more than an hour.

The buildings emerged from the fog

as they crept past the outskirts of Kador into the activity of the city. They were like ugly, mud igloos. Fashioned as Venusian structures had been built for centuries, they lay in a random scattering of various-sized hemispheres of cement.

Here and there, as they crouched in the shadows, the scientists could see the fantastic, elongated men shambling about. None wore helmets or heavy clothing here. They were dressed in yellow spun-glass uniforms.

There were evidences everywhere of unusual activity. Small Venusian skyships made a long line before a row of hangars, each one seemingly ready to fly at a moment's notice. There was not a man in sight who did not carry the long-barreled, heavy force pistol brought from Venus.

A sense of nearness to disaster clutched John Hale as he slid from shadow to shadow. Time grew short . . . deadly short. That thought was pounding through him when he stopped at the side of the huge dome known as the Palace of The Six.

"Lord, this heat!" Klamper muttered.

Hale grunted in sympathy. The terrible warmth of the atmosphere sucked the sweat out in a sticky film all over his body. Perspiration flowed down his forehead and got in his eyes. He felt as though he were baking in an oven.

Decidedly he thrust the apathy of his body down and trod ahead. Entrance to the Palace was through a tunnel slanting down from the street. At the end of the corridor the walls flared back into a blue-walled room. Four doors faced them in the curving wall confronting them.

Hale's first impression was of a far-off roar coming from somewhere in the building. He had been here before; but never had he heard this noise, nor felt the floor vibrate as it did now.

Tensely he moved ahead. In the next moment he was whirling, as a Venusian's nasal voice struck his ears: *"Earthman—what do?"*

CHAPTER IV

Into the Cone

IN a little alcove at the side of the door stood a scowling Venusian guard. He came forward now, gun in hand. One bolt of energy from that pistol would agitate every atom in Hale's body, tearing him to pieces like a haystack in a whirlwind.

Somehow John Hale put a smile on his lips. He advanced to meet the spindly giant. "I have news for your Master, Rof Thurlo!" he explained. "We have broken the plague!"

The guard jerked to a stop. Shock froze his green features. "This true?" he gasped.

Hale nodded excitedly. He took a paper from his coat pocket and held it toward the Venusian. Read this!" he replied.

Suspiciously, the other slid ahead, keeping his gun ready. He took the paper in his left hand.

In that instant John Hale moved. His right hand clamped on the Venusian's left wrist as he slid under the outstretched arm. He shuddered to the zooming passage of an energy charge. Then he had heaved on the other's arm and flung him into the wall.

The man uttered one shrill squawk as his head caved against the ragged blocks in the wall, torn loose by his shot. Limply he slid to the floor, a thick green syrup oozing from his split head.

Klamper gasped: "Listen! Someone's coming!"

Hale seized the energy pistol and faced the four doors. But it was diffi-

cult to tell from which the noises came. All he knew was they must do something quick!

"Might as well try this one!" he proposed.

He flung an end door open and they sprang through—to crash into the arms of a dozen Venusians!

THE struggle consisted of a dozen chopping blows by the green men and a few feeble efforts by Klamper and Hale. Half-conscious, they slumped to the floor.

The taunting voice of Rof Thurlo furnished Hale strength to glance up. The Master stood with legs widespread, his scrawny arms crossed.

"So you've found out," he leered. "Most convenient for us that you chose to try this insane thing. You two have been on my danger list since the start. Now—two names will be stricken off the list. The rest will not matter."

"This is what gratitude means to you of Venus, is it?" the laboratory sleuth ground out, stumbling to his feet. "Our world provided you with everything you needed here. You've had the opportunity to study all our sciences. You repay by . . . setting out to conquer us!"

"To the true scientist," Thurlo sneered, "gratitude is but a word. Venus needs your world, the metals and gases you have that we do not. We are justified—but why talk of right and wrong, when we are worlds apart—literally? The point, now, is that you have gone to a great deal of trouble to no avail. For you shall know the same end as those in your city, and in cities to follow."

He turned away, gesturing for the others to bring the prisoners.

They descended a long flight of stairs, the sound of roaring increasing at every landing. Hale was asking himself what it meant when they stopped before a massive door. The door slid into the floor . . . and instantly bedlam rushed out.

The howling of a thousand fiends engulfed them. Wind rushed by them with the force of cannon blasts, seeming to try to drag them through the portal into the vast space beyond.

Hale found himself prodded to the very sill. As fear rushed over him, he saw what it meant. The space he was looking into was in the shape of a great cone, with him standing at the top. The whole interior, down to where pipes and machinery showed dimly two hundred feet below, was a boiling, roaring fog of rushing pink vapor that tore through a hole in the apex.

The scientist guessed it must be thousands of gallons of water being sucked through that hole by a powerful vacuum somewhere above. And now his gaze followed a circular stairway that spiralled down through the depths to the very bottom. His face whitened at the thought of entering that maelstrom.

"Go on!" Rof Thurlo commanded. "You were curious. Now you'll see!"

Hale stepped out onto the narrow catwalk. He closed his eyes for a second, against the fear that leered beneath him, in the depths of the cone. Hesitantly, then, he started down.

A HUNDRED times on that dreadful journey through vapor that he scarcely dared breathe, he thought death was at hand. The iron steps were slippery, the heavy vapor blinding. Arnold Klamper stumbled behind him, several times clutching at his broad shoulders for support.

The Venusians showed no fear of slipping. Their confidence was seemingly inspired by the magnetized soles

of their metal shoes.

Hale could see now that the stairs led into a room beneath the cone, a great space filled with pipes and pumps. Before he knew it, the entrance was there before him. A blessed door that he dived for, though death waited beyond —and at last he was standing on solid cement, dripping with moisture.

Relief and a feeling of awe kept Hale rooted there while the others crowded through. His gaze whipped about the vaulted glass room.

There was a mighty copper apparatus in the center shaped something like a cream separator, with a six-foot pipe leading into it. Through a funnel-shaped device in the top, vapor rushed with terrific force into the cone. There, on the instant of its exploding into the giant mixing chamber, it was played on by several dozen small streams of pink gas.

A moisture that had nothing to do with the vapor sprang out on John Hale's forehead. This was the source of the Yellow Plague! In this subterranean chamber death and horror were being created!

"Clever!" Arnold Klamper ground out. "As clever as devils — and as cruel!"

Rof Thurlo's mocking voice drew their glances. Among the larger pumps was a gleaming chromium sphere that rested a foot off the floor on a trellis-like arrangement of glass pipes. Thurlo had his hand on one of the valves.

"Bring them here!" he snarled.

He waited until the prisoners were before him. Then he spun the wheel valve. From the nozzle came a spitting sound; without further warning a cloud of red gas, glittering with a million crystals, blossomed from the sphere.

The Venusians began to laugh harshly as the Earthmen disappeared in the poisonous fog. This gas was life to them; to the scientists it was the deadliest of poisons.

Rof Thurlo broke into wild laughter, taunting them with sarcastic gibes. But his humor trailed off as a minute passed and the forms of the victims still showed through the cloud, erect and apparently unharmed. Suddenly he swore.

"The masks! Take off their gas masks!" he screeched.

TWO of the guards sprang ahead. John Hale thrust Klamper behind him. "Back," he uttered swiftly. "We're making our break now. I've got a gun, which they made the mistake of not searching me for."

"Good!" ground out Klamper, the light of hope shining in his eyes, through the lens of his ugly mask. "But do not push me aside. I can fight too!"

Hale peered up through the swirling mist, and picked out the charging guards, coming down the swaying stairway. A crooked grin twisted his face into a smirk of anticipatory action, and he crouched low, leveling his gun steadily.

Then he blasted a shot into each of the Venusians.

Screams of terror lanced through the thunder of the .375. Thurlo shrieked orders as he dragged out his own energy pistol.

A withering blast of energy seared past Hale's head, and vapor sizzled as it struck the floor behind him. Klamper had ducked behind a protective machine. Hastily Hale followed, and breathed a bit easier as Thurlo's energy pistol stopped blasting.

"We've got them deadlocked," Hale muttered. "They can't risk damaging this machinery, and those energy pistols are tough medicine."

He peered out, and saw that the Venusians were trying to gain a vantage

point above, so that they could rout them from their momentary stronghold. Hale grinned again, and stepping forward rapidly, placed two well-aimed shots in the body of the foremost Venusian. A hoarse scream came from the wounded man, and he plunged in an arc through space from the stairway, squarely into a great revolving wheel. There was a horrible crunching sound, and the groaning of strained machinery for an instant, then the normal roar returned.

"They won't try that again!" said John Hale, returning to his crouch.

"But we've got to get out of here," Klamper protested. "If we stay here, we'll be killed like rats in a trap."

Hale nodded. "We'll make a break for it . . . but say, things are pretty quiet. Wonder what they are up to."

Klamper stood up determinedly. "To no good, you can be sure," he affirmed. "If we are to make a break, it must be now."

Hale stared around. "Create a fuss, somehow," he whispered more to himself. "Then, under cover of the confusion . . ."

Then his eyes fastened on the nitrogen sphere. Hope came over him in a warm wave. The gun leaped in his hand as he emptied the remaining four shells into the tank.

A greater roar than that of the revolver took possession of the room now. Hot gases, rebellious under pressure, tore through the small holes, ripping them instantly into huge gashes. Inside of five seconds the room was solid with the blinding fumes.

Hale's hand found Klamper. "Out!" he hissed. "Our one chance to stop them permanently is outside."

Through a hell of screaming and roaring, they groped to the ladder again. They were halfway up the slippery iron stairs when the crackling of energy bolts electrified the air about them. Up ahead Hale watched a large chunk fly off the spiral stairway. Then the firing stopped and the steps shuddered to the pounding of many feet. Apparently they realized the danger of ruining the stairway and imprisoning themselves in the chamber of death.

SOMEHOW they made the top and drove up the climbing corridor to the outside air. Hale paused only long enough to take a deep breath and glance through the streets. In the mist a long way south he could see one of the gigantic electro-screens.

"This way!" he panted. "We've got to turn that thing off."

Klamper's seamed face was blank with wonder, but he merely shrugged and followed in Hale's wake.

Before they could reach the end of the city, a howling mob had formed behind them. The ground about them leaped and churned with the impact of the deadly force charges. Hale forced a little more effort out of his aching legs. Klamper was almost finished.

The buzzing of the screen was loud as Hale dived around a corner. Then hope buoyed him up with a fierce surge as the little control house loomed before him!

At the base of one of the huge pillars supporting the screen, it squatted in Venusian ugliness. But to Hale it was the most beautiful sight in the world. He pounced on the door and tore it open. Through the portal he shoved the staggering surgeon, to follow him hurriedly.

One swift glance showed him what must be done.

Relays and switches covered one entire wall. He began pulling them out one after the other. Klamper took his cue and began doing the same. Quite suddenly darkness blanketed the room.

HALE stepped to the door. His fingers were busy reloading his gun with the few extra shells he had brought along. Outside he saw the same darkness lay over Kador. A gasp caught his throat when he realized the poisonous fog was lifting!

Released from the hold of the electro-screens, it was being swirled off by wind! It was suddenly colder, too. On those two facts Hale was banking all his hopes.

Now the first of the Venusians swept around the nearest building. Hale saw an energy pistol come up. His revolver roared once and brought the man down. The two who followed him stumbled over the body and crashed to the ground. Hale waited for them to rise . . . but they seemed unable to do more than crawl.

Cries sheered the night silence. More and more of the green men came around the building. But they were stumbling and reeling like drunken men. Already the atmosphere of earth was poisoning them!

A few shots blasted into the building, spraying the scientists with cement chips. Hale held his fire, saving his last two shots for those who came too close.

A horde was gathering in the street. But their cries of anger had changed to wails, their powerful limbs now too weak to support them. Crawling, staggering, the mob came on.

Now the front line of men had ceased to move. Others tried to pile over them to reach the control house. It was when Hale began to breathe more easily that Rof Thurlo appeared. He fired once . . . to miss the ruler by feet. Thurlo laughed.

Like an insane man he fought his way through the crowd and spilled into the open space. There he planted his legs wide and swayed drunkenly. In the wild stare of his red eyes Hale read the same thought that was in his mind: That here in this city of death the two of them must settle the fate of a world.

The scientist waited until he was looking into the bore of Rof Thurlo's own weapon before he squeezed the trigger again. A groan slipped past his lips. He had missed! Rof Thurlo came on. Behind him Venusians tumbled to the ground dead. But yet, Rof Thurlo came on, vindictively. Was the Venusian immune to death?

Arnold Klamper breathed softly: "We tried, my friend. Would to God we had succeeded!"

Then suddenly their despair exploded. Rof Thurlo lowered his gun without firing it, groaned softly, and toppled forward!

John Hale and Arnold Klamper stood watching the shambles for a long time, each silent under his own thoughts. Something too big for them to conceive had happened tonight.

All that Hale could realize was that one more spark of life in that sprawled body out there—the mere strength to squeeze a trigger—and greed would soon have written "Finis" to the ageless story of Earth.

A LOST CIVILIZATION

THE unearthing of a colossal sculptured head of stone and several inscribed monuments, some of the Mayan culture, in a region of Mexico more than a hundred miles outside the previously known "Mayan area" has been announced from the Washington, D. C., headquarters of the National Geographic Society. The discoveries were made near the village of Tres Zapotes in the State of Vera Cruz by an expedition conducted by the Society and the Smithsonian Institution.

"Significance of the discovery to archeologists," says the announcement, "lies in the fact that science has never before had conclusive evidence that the Mayan civilization extended farther west than a north-south line crossing the western portion of the State of Tabasco at the southern end of the Gulf of Mexico. East and south of this line, in the States of Tabasco, Chiapas, Campeche and Yucatan, Mexico, and in parts of Guatemala, Honduras and British Honduras, are scores of ruined cities and thousands of elaborately carved monuments left by the Maya. These people, who have been called 'The Greeks of America,' developed the highest civilization reached in the New World before the arrival of Europeans.

"The only previous indication that Mayan civilization reached farther westward along the Gulf coast was the finding in 1902 of the Tuxtla Statuette, near the city of San Andres Tuxtla, Vera Cruz. This small carved object, now in the National Museum in Washington, bears date in Mayan numerals that has been interpreted as corresponding to 98 B.C. It is thus the oldest dated Mayan object known to exist; but because it is light enough to be easily transported, some archeologists have not been willing to accept the implication that Mayan culture once flourished near San Andres Tuxtla.

"The monuments now being uncovered by the Geographic-Smithsonian Expedition are near and even slightly farther west than San Andres Tuxtla. They are massive and are obviously in the situations in which they were erected. Their discovery not only extends to a considerable distance the known western limits of Mayan cultural influence, but also confirms the significance of the Tuxtla Statuette.

"One of the newly discovered monuments at Tres Zapotes bears a date in the same system of Mayan numerals as those appearing on the Tuxtla Statuette. Although the complete correlation of this date with the corresponding year of the Christian calendar has not been worked out, sufficient progress has been made to determine that the monument was erected during early rather than late Mayan times. So important is the interpretation of this date considered that a number of American and Mexican archeologists have been invited to Tres Zapotes to confer with Matthew W. Stirling of the archeological staff of the Smithsonian Institution, who is in charge of the field work.

"The colossal head, which was the first object to be unearthed, was found to be nearly six feet high from the base of the neck to the top of the headdress, and nearly 18 feet in circumference. The largest of the monuments so far discovered is more than 17 feet long and nearly a foot and a half wide. Approximately 30 mounds, scattered over a distance of about two miles, have been mapped in the Tres Zapotes group."

THE GIANT EYE

Here is the story of the new 200-inch giant eye on Mt. Palomar, from which astronomers expect such valuable additions to knowledge

LAST summer the California Institute of Technology completed a gigantic undertaking. It was the erection on Mt. Palomar's summit, 6,125 feet high, of the Giant Eye, as the new 200-inch reflecting telescope is being called.

The most important part of a big telescope is its reflecting mirror. Few persons outside of the working staff of this latest giant telescope will ever realize the tremendous amount of work, worry, trouble and cost that went into the manufacturing of its mirror.

To begin with the mirror was poured in the form of a single glass block in a Corning, New York, glass factory. The huge block, seventeen feet in diameter and fourteen inches thick, weighed 43 thousand pounds and required nearly a year to cool. When the great mass of molten glass had finally solidified, it was discovered that some mold cores had loosened during cooling and floated to the block's top, it resulting in an imperfect glass surface. So the pouring job had to be done over again. The second time the block's surface cooled perfectly, flawlessly.

When the great block of glass had solidified, the factory was confronted by the difficult problem of transporting it to California.

Because of its huge size, factory officials figured that if the block were sent on a railway flatcar, every train passing the block-carrying freight from New York to California would have to be side-tracked so the block-carrying freight might pass it. It was thought that the only way the block could be gotten to its destination was to load it on a ship and carry it via the Panama Canal, a process which would have entailed tremendous transportation costs. So finally the huge block was loaded on an extra strong flatcar and carried to California. Only a few inches of clearance intervened between the train carrying it and those passing it.

UPON its arrival in Pasadena, the huge chunk of glass was far from ready for use; it needed a stupendous amount of grinding. A special machine was set to work on the grinding job.

Started in 1935, the machine ground day and night on the big block of glass until the spring of 1938, when the grinding was completed. Fully two tons of glass were ground out of the block, its top side being hollowed and curved. In this excavation the two-hundred inch reflecting mirror was laid.

The purpose of the curved shape of the mirror is to catch every bit of light from the big telescope itself when it is trained on a distant star.

The light the mirror catches, it focuses high up in the telescope's sixty-foot framework, where there sits a photographer with expensive picture taking apparatus.

Astronomers do not obtain their information about stars by merely looking at them through a telescope. They get their facts by studying the pictures they take of the stars.

LASTLY, the mirror was silvered into the curved excavation, and in this as in everything else connected

with the new telescope, the astronomers demanded the best material to be had, and that was aluminum.

An aluminum surface makes the mirror much more susceptible to light than ordinary silvering would have done. Before the work of silvering in the aluminum was undertaken, every bit of the hollowed out space was measured and checked over many times with as many different instruments to make absolutely certain that the grinding machine had done a perfect job. Had there been the smallest bit of an uneven spot due to imperfect grinding, it would have put the mirror out of focus at that place, and the result would have been a "blur spot" on the photographs taken of stars. But the excavation's surface was found to be one hundred percent perfect and therewith ended one of the biggest worries of the astronomers, that more delay and expense might be had because of imperfect grinding.

Next the hollowed out block of glass was placed in an air-tight tank, and then left to settle on the glass. The cost of making the mirror was more than one million dollars. The telescope's total cost, with its great observatory and other equipment, was nearly five million dollars. Its total weight is four hundred thousand pounds.

The telescope's work staff is composed of some fifty persons, which includes astronomers, specially trained photographers, mechanics and technicians. Residing with their families near the observatory as these people do, a small village has come into being near the summit of Mt. Palomar.

IT is interesting to consider the things astronomers hope to achieve with this new giant eye.

To the man on the street, the distant galaxies are not the interesting part of astronomy; nor is the matter of Einsteinian theory or curved space, or limits of the universe of popular appeal.

He wants to know about the nearby neighbors of earth, the planets, Mars, Venus, Saturn—.

But not so the astronomers. For several years the giant eye will peer only into the great depths of space, m a p p i n g , photographing, and constantly photographing every inch of the heavens visible from Mt. Palomar.

And these photographs will be collected, studied, analyzed, compared with existing photos, and their inmost secrets wrested from them by keen minds. What they learn from the depths of the cosmos will be much, because this new telescope will broaden the known universe by twenty-seven times. Millions of new stars will be seen, thousands of new galaxies. And many mysteries now unsolved will become plain.

It will be interesting to watch for the results of the first few years of scanning the cosmos, but news will be meagre and far apart. Science is not noted for its speed.

ACTUALLY, the new giant eye is more camera than telescope. The day of visual observation is gone. And it is a fact that without photography, astronomy would still be in its swaddling clothes. The maps of the heavens would be filled with greater gaps than exist now, without the camera's vigilant, patient eye.

And no longer are voluminous books of record kept, but instead neat files of photographs. In recording and noting changes in the heavens, new photographs are superimposed over old ones, and deviations are instantly noted.

Perhaps someday even this bit of human element will be eliminated from the telescope, and a robot scanner, of selenium cells will "see stars" for us.

QUESTIONS and ANSWERS

This department will be conducted each month as a source of information for our readers. Address your letters to Question and Answer Department. AMAZING STORIES, 608 S. Dearborn St., Chicago, Ill.

Q. If diamond could be manufactured in blocks and sheets, could this material be used as girders, armor plate, etc. I hold that it would be stronger than steel for these purposes, but several friends insist that it would shatter at the slightest impact. —Festus Pragnell, England.

A. A diamond ranks number ten in the scale of hardness, and it is the most adamant of substances, being used for drill points, etc., however, since it is crystal, it has a tendency to shatter, like all crystals, along its grain. Thus, it seems to your editor that sheets and girders of diamond would shatter more easily than those of iron. Diamond cutters shatter diamonds very easily with a simple tap of a mallet and a cleavage tool. A building constructed of diamond girders would present problems in riveting, since the slightest critical impact at a point of cleavage along the grain would shatter it.

* * *

Q. A friend and I have an argument over the Sargasso Sea. He contends the Sargasso is a dense mass of weeds over a mile deep through which no ship, even if equipped with cutter, can pass, and at the center of which drift the hulks of old ships. I claim that the Sargasso is a thin layer of weed through which ships can and do easily pass, and that the tale of the ships is in error. Who is right, and what is your source of information?—Fred Hurter, Canada.

A. The Sargasso Sea is largely mythical, at least so far as great masses of entangling weeds is concerned. The true Sargasso, which we have many records of, appears every year, and is a thin layer of weeds which becomes detached from the sea bottom, and due to the oxygen bubbles on them, caused by their decomposition, rise to the surface. But certainly no ships were ever trapped in them, nor do they exist at such tremendous thicknesses of one mile, or even one inch. Any standard encyclopedia can give you information on the subject.

* * *

Q. Did canaries really come from the Canary Islands?—B. N., Charleston, S. C.

A. The actual origin of the canary as a cage bird is obscure. It seems probable that captive canaries were first secured from the Canary Islands, but it is doubtful that this stock has furnished ancestry of all our birds of this kind. The serrin finch of middle and southern Europe is so similar that it may often have been captured and accepted as a canary, and interbred until all distinguishable differences were lost.

* * *

Q. Is it true that Oregon has the largest stand of White Pine in the United States? I've had an argument with a friend who contends most of the white pine comes from Michigan. Who is right?—R. L., Pensacola, Florida.

A. The largest tract of standing white pine is located in Michigan. It is the state's largest stand of virgin timber, and is unequalled by any other section of similar timber, although other states have equally great forests of other types of trees.

* * *

Q. Why is the water of Niagara Falls green? —L. M., Springfield, Illinois.

A. In accounting for the color of the water of the Niagara, it is necessary to consider the fact that this river comes directly from the lake, where all sediment has been deposited, and therefore the water is clear. The greenish color of clear water in great volumes is due to the amount of carbonic acid gas it contains.

* * *

Q. From what ore, if it is an ore, is aluminum obtained?—P. T., Los Angeles, Calif.

A. Aluminum is obtained from Beauxite.

* * *

Q. How fast does the blood circulate through the body?—John Grieg, Sturtevant, Wisc.

A. All of the blood in the human body passes through the heart in one minute.

* * *

Q. How long do worker bees, drones, and queen bees live?—L. L., Memphis, Tenn.

A. Worker bees and drones live approximately nine months, whereas a queen bee has been known to live as much as three years.

* * *

Q. How is hardness of metal measured?— Arthur L. Hayes, Louisville, Kentucky.

A. In testing tools, for instance, for hardness, a small diamond-pointed hammer is suspended about 10 inches above the tool to be tested. In free fall, the amount of rebound of the diamond hammer determines the degree of hardness of the metal in the tool.

MONTHLY MERIT AWARD

WE are pleased to announce that the winner of the April Merit award is Mr. Thornton Ayre, who came in first with a good margin over his closest rivals, Ed Earl Repp and Eando Binder. His "World Without Women" garnered 517 votes out of a possible 644. The complete tabulation follows: (first number is votes polled, and second is rating on percentage basis, assuming 100% to be perfect)

Title	*Author*	*Votes*	*Rating*
1. World Without Women	Thornton Ayre	517	.80
2. The Deadly Paint of Harley Gale	Ed Earl Repp	445	.69
3. The Flame From Nowhere	Eando Binder	369	.57
4. The Invisible Invasion	Frederic Arnold Kummer, Jr.	330	.51
5. Revolution On Venus	Bradner Buckner	306	.48
6. Martian Avenger	Polton Cross	263	.41
7. Madness On Luna	R. R. Winterbotham	245	.38

In order for a story to receive 100% rating, it would be necessary for that story to receive a vote of first place from every voter. Thus, it is easily seen that the rating of 80% received by "World Without Women" is quite high. Any story above 70% can be said to be exceptional, and any story over 50% rates very good.

Next month we will announce the winner of the May contest, on which votes are already pouring in as this goes to press. Watch for the results, and meanwhile don't forget to clip the coupon below and get your vote in on this issue. The coupon is so arranged that clipping it will not remove a part of any article or story. (Be sure to list *each* story, 1 to 7, or your vote will not count.)

CLIP THIS COUPON AND MAIL

AMAZING STORIES
608 S. Dearborn St.
Chicago, Illinois

In my opinion, the stories in the June issue of AMAZING STORIES rank as follows:

	No. Here
THE WHISTLING DEATH, by Abner J. Gelula	.....
THE DEADLY SLIME, by Frederic Arnold Kummer	.....
BRIGADE OF THE DAMNED, By Ed Earl Repp	.....
LUNDSTRET'S INVENTION, by Robert Moore Williams	.....
WORLD WITHOUT DEATH, by Polton Cross	.....
THE RADIO MAN RETURNS, by Ralph Milne Farley	.....
MICROBES FROM SPACE, by Thornton Ayre	.....

NAME .....

ADDRESS .....

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

(Continued from page 4)

ity may be attributed to the lack of disease. The world was young and man was not civilized enough to have all the modern diseases. He had plenty of room and living conditions were not so congested. He drank pure, unpolluted water. The air was pure, untainted. And perhaps they had some knowledge of how to attain great age which has been lost."

Well, there's a real point for the truth of the Bible in stating the ages of those incredibly old men. Methuselah *was* 969 years old. Because the years *were* the same as now. Or else biology is all wrong. Another point to be considered is that in several instances, additional children were born (to the same wife) within five or six years after the other, even less, and by Goldman measurements of time, that would mean months. Once more, biology steps in and says "impossible." Man couldn't change as much, biologically, as that, in a few thousand years.

* * *

THE British Interplanetary Society writes, and Arthur C. Clarke, secretary, states: "If anyone will put up a million or so now, the Moon could be reached by 1950 at the outside." Well, how about it, you philanthropists? Come on, shell out the million. There's a ship waiting to be built, complete to the last detail. One feature mentioned by the BIS letter is the invention by them of a modification of the stroboscope, (called a coelostat) which makes the sky appear stationary while the ship is spinning. We hope to present a back-cover feature to our readers in the near future, with a full-color painting of the proposed ship, and an explanatory article. In contrast to our own imaginary ship of some months ago, this will prove greatly interesting, we are sure.

* * *

IN our March Observatory, we loosed a blast on "Story" in science fiction manuscripts, and it seems we loosed a hornet's nest. The response was instantaneous, both from authors and readers, and we feel quite pleased to know that the Observatory is so closely followed. Also, we feel more than pleased to discover that our readers and authors agree entirely with the points put forth in regard to what science fiction stories ought to contain. Why is it that many readers will not take the time to tell the editor what they really want, until the editor himself gets hot under the collar about it? Then, once the lead is taken, they deluge the editorial desk with approbation.

* * *

Talking about science, this month our big sister, POPULAR PHOTOGRAPHY, appears on the stands with the most complete photographic directory in history. If there's anything you want to know about photography, or the scientific gadgets that make photography an important factor in everyday science, you ought to get this GIANT 182 page issue.

* * *

WHICH seems to bring us to the last of the observations for this month. So we'll close the observatory dome and give the editorial telescope a rest. We'll be seeing you.

THE HOUSE OF MIRACLES

▼ ▼ ▼

STRANGE things came out of Laboratory Eleven. And stranger still was Head Chemist, Borden Keohane. "Human life is cheap!" he said. And somehow these grim words linked up with a strange pit of utter cold, far beneath the Laboratory Eleven. What strange horror lay in that place no eyes had ever seen? Blaine Rising thought he knew, but he couldn't prove it. Then when the trapdoor opened beneath lovely Marcella Kingman, Blaine Rising went mad, but even in madness, he could not have dreamed of the retribution that was to come to Borden Keohane. Don't fail to read this sensational story of scientific miracles

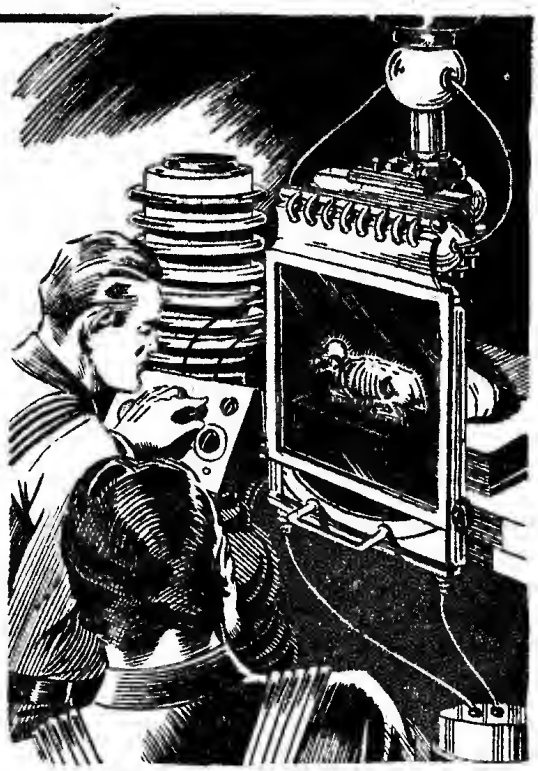

Illustration from The Pit of Absolute Zero

THE PIT OF ABSOLUTE ZERO

By DON WILCOX

• • •

EDWIN K. SLOAT takes you to the country WHERE TIME STOOD STILL. Here's a story that will really thrill you. Go with Kent Rider into a weird timeless valley, while beyond its confines a world goes mad with war. Escape with him in a desperate attempt to halt the slaughter of helpless women and children. Then stand aghast at an incredible revelation, and a cruel deception.

ROBERT MOORE WILLIAMS will capture your imagination as he reveals a strange hidden crypt and a deadly menace beneath the famous pyramid of Gizeh.

RALPH MILNE FARLEY leads you across the river of mud, the river of blood, and through the seven ordeals, in an astonishing land hidden deep in Lower California.

AND OTHER ARTICLES IN THE BIG JULY ISSUE OF

SIX COMPLETE STORIES — **AMAZING STORIES** — **ON SALE MAY 10**

Meet the Authors

ROBERT MOORE WILLIAMS Author of
LUNDSTRET'S INVENTION

ROBERT MOORE WILLIAMS

FRANKLY, I would rather write two stories than one autobiographical sketch. The reason is not hard to find. Writing about myself comes under the heading of work, and while I have lived on intimate terms with work for several years now, I enjoy other company more. On the other hand, writing can often be fun. In fact, if the time ever comes when writing is not a hell of a lot of fun, I'll throw this typewriter into Lake Michigan—or into whatever body of water is handy at the time—and get myself an honest job.

In my opinion, Lundstret's Invention qualifies as science fiction because it shows the biggest failure of science at the present and the biggest job that science has ahead of it in the future—civilizing the human race. In the past two hundred years the sciences dealing with the world of nature have achieved miracles. I could list a few of those achievements, but why try? Every time you bush a button and a light goes on, you witness one of them. So familiar are they that you've grown tired of hearing about them, you don't even notice them, you take them for granted; or at least I do.

Meanwhile the hoodlums pervert the discoveries of honest men to dishonest ends. Every time I think of it, I get mad. Not angry, not annoyed. Mad! No weaker word will suffice.

If we could use just a little science in human relations, the miracles that we could accomplish would make the miracles of the past fade into insignificance. The scientists have worked wonders, but if they had a real chance, it is my hunch you would really see some wonders.

Well, the subject is receiving the attention of many capable men. There is hope that some day the hoodlums will be eliminated. Meanwhile the science of the humanities, dealing with the job of civilizing the human race, is waiting for its Newton. I don't know how much longer it will have to wait, but I hope the time will not be too long.—*Robert Moore Williams, Chicago, Illinois.*

ABNER J. GELULA Author of
THE WHISTLING DEATH

MODESTY forbids my telling you what a really great guy I am . . . 32 years old, married, two children (boy and a girl), live in Ventnor, N. J. (a suburb of Atlantic City) . . . for several years a newspaper reporter, news editor, picture editor, etc., on New York and Atlantic City newspapers . . . was technical editor of Radio World about 1927; radio editor of the old Experimenter Magazine (Gernsback) and with Radio News in the "old days" . . . was one of the first radio amateurs (2AUQ) rattling the ether with 1KW spark . . . wrote a batch of scientific fiction for all the pseudo-science mags among which were such masterpieces as "Automaton" (purchased by Universal Pictures Corp. for movies that never materialized because it was discovered that it would cost about $1,500,000 to do it), "Peace Weapons," "Hibernation," "Farrington," Valley of the Blind," etc., etc., etc. . . . drifted away from fiction until Ziff-Davis reminded me that it might be a good idea to turn out some more: enter, "The Whistling Death."—*Abner J. Gelula, Atlantic City.*

POLTON CROSS Author of
WORLD WITHOUT DEATH

MEDITATION on the unexplored regions of future politics and its possible relation to science fiction formed the basis of "Out of Eternity." I tried to picture if it was possible, after a civil war for the ruling heads—or at least those in authority—to revert back to the inquisition methods of the Middle Ages. Bearing in mind

some of the strange things happening in the world today I decided it was not only possible but probable. It also seemed likely that a man with the brutal inhumanity of Abel Dodd might have control, venting his callous hatred upon the defenseless.

Personally, I was rather sorry Dodd had to come to such a tame end, and so soon: I had imagined him in the first place as dominating the whole action of the story. But it so happened that the plot took turns which simply would not permit of him appearing for too long.

It is, I know, a far cry to the planet Saturn, but such is science fiction we have the chance to measure up certain possibilities that *might* conceivably occur. Anyway, I took that chance and also bolstered up my heroine with a bit of mystery to add piquancy to her strange character.

If war is ever to be eradicated from our planet I imagine that the surest way would be by making everybody eternal: then war would die from its very uselessness. It is a far cry to a deathless world as yet, unfortunately, but how the idea might work out is at least revealed in a small scale in the early parts of my story.

In truth there is little I can reveal about the insides of this story without giving away the vital points which constitute its plot. Some of the ideas it contains are well tried, but that fact is counterbalanced by the method in which they are applied. Any idea can be new if the slant on it differs from the usual hackneyed run: so I think, at least.

Take "World Without Death" then as a representative effort of what might occur. Add to that the power of future science, the eternal brute instincts of man and mob psychology, and you get results similar to those I have depicted.

I would add only one thing. I hope my life is over before such things come to pass.—*Polton Cross, London, England.*

RALPH MILNE FARLEY Author of
THE RADIO MAN RETURNS

MY first science-fiction story was "The Radio Man." It recounts the landing of a projectile on my farm on Chappaquiddick Island, Massachusetts. The projectile contained an account of the adventures of my missing Harvard classmate, Myles Standish Cabot, greatest scientist of two worlds. While experimenting with the wireless transmission of matter, he accidentally transmitted himself to Venus, where he rescued the human race from domination by huge ants. Myles marries the beautiful Princess Lilla.

In "The Radio Beasts" Myles returns to earth, visits me, and recounts further adventures. Myles's son, Prince Kew, lawful heir to the throne of Cupia on Venus, had been deposed by the renegade Prince Yuri, friend of the antmen, but Myles had finally won. An SOS from Lilla interrupts Myles's visit to my farm, and he transmits himself back to Venus by a huge radio set which he has built.

I got the rest of his story via that radio, and told it in "The Radio Planet." This one is really three novelettes, strung together. Myles lands on Venus on the wrong continent, the one to which the antmen had been banished. There he finds another human race and leads them to victory over the ants. Then, en route home, he flies to another continent inhabited by "Whoomangs," a strange collection of pterodactyls, and every kind of beast, who are rendered human by the insertion of a certain kind of maggot in their brains. Fleeing them, Cabot finally reaches Cupia, kills Yuri, and places little Kew on the throne.

In "The Radio Menace," the Whoomangs invade the Earth, but Myles Cabot appears merely in the final scene when the victorious humans ship the last of the Whoomangs back to Venus.

There has been such a demand among the fans for a return of my radio classmate, that I finally decided to bring him back to my thirtieth reunion this spring.—*Ralph Milne Farley, Harvard, 1909.*

ED EARL REPP Author of
BRIGADE OF THE DAMNED

WELL SIR, it looks like the Frankenstein monster is really dead this time. Having seen the latest U-thriller, "Son of Frankenstein," last night, I don't see how even a synthetic man can survive a ducking in boiling sulphur, but I'll wager dollars against doughnuts that the frightful galoot can, and will be revived.

I really got a big kick out of this film and it reminded me of the old days when I wrote "The Synthetic Men" for our mutual friend and benefactor, Hugo Gernsback. But there was one thing in the picture that struck me as being somewhat off-balance, mainly that the monster Frankenstein, although endowed with synthetic life, was incapable of thinking for himself. Yet when he ambushed the villager, murdered him and then very thoughtfully placed the body beneath the wheels of the heavily-laden wagon to make the killing appear accidental, well, that is what I'd call sane thinking, the product of a very active brain.

It seems to me that Hollywood is overlooking a tremendous opportunity by not producing more pictures with scientific backgrounds, particularly during the present cycle of so-called action pictures. Almost conclusive evidence that a great portion of magazine readers is fantasy-minded, that is to say enthusiastic over fictional adventures in the weird and scientific, is borne out by the birth of an increasing number of science fiction magazines such as the new FANTASTIC ADVENTURES et cetera.

As a motion picture scenarist working under contract with Warner Brothers, Columbia Pictures, Republic Pictures and so forth, I believe that pictures of fantastic or scientific nature, sound in plot structure and convincingly written and filmed, would meet with more success than a lot of the old, time-worn themes being monotonously exploited at present. There is a wealth of fine motion picture material in Amazing Stories and other scien[illegible]-fiction books and I'd like nothing better

than to take a man's-sized whack at adapting some of them for films. But try and convince a hard-boiled Hollywood producer that he's overlooking a fine opportunity!—*Ed Earl Repp, Van Nuys, California.*

FREDERIC ARNOLD KUMMER, Jr., Author of THE DEADLY SLIME

"THE Deadly Slime" like many another science-fiction story was founded on a newspaper clipping . . . a clipping which referred to the amazing cell culture of Dr. Philip R. White, from a growth on a tobacco plant. The culture's remarkable rate of growth struck me as a natural for a yarn. In the writing of this story, I have tried to break away somewhat from the more conventional straight type and present it just as you and I might hear of some cataclysmic happening seated in our arm-chair by the radio. I'm curious as to how you, the reader, will like this manner of presentation.

As I write this letter today, I can't help but indulge in a mild chuckle of satisfaction. When I first turned to science-fiction, only a year and a half ago, a friend of mine, also a writer, gave me the well-known horse laugh. He pointed out that there were only two or three s-f magazines publishing, and claimed that this type of yarn was only a passing fancy. Several days ago I met this same friend of mine and all he could talk about was how much trouble he had in his own field, what with magazines going out of business, or reducing rates. Yet in this same period science-fiction had increased to at least seven periodicals, with half a dozen other magazines using science stories from time to time in addition to their regular type of yarn. And I still claim that this is only the beginning, that before you and I are much older there will be dozens of s-f magazines, that this is the field of the future. More power to Amazing, the pioneer, which stuck to its guns and carried on to become one of the leaders in its line! And as for me, I'm happy to be engaged in work that turns man's thoughts to the conquest of nature, rather than the conquest of his fellow man.—*Frederic Arnold Kummer, Jr., Baltimore, Md.*

THORNTON AYRE Author of MICROBES FROM SPACE

THIS idea came to me in the oddest fashion on a cold autumn morning.

Have you ever poured hot water into an earthenware jug and heard the darn jug kick up a row like a bee hive? Try it sometime. I was so interested I nearly forgot to shave.

I wondered if anything might happen to metal to make it kick up a racket like that. Possibly, but what? One just couldn't roll around pouring hot water over girders. The only next best thing I could think of was something alive inside the metal, in the fashion that a white ant eats the insides out of woodwork.

But there, unfortunately, my complex for being mysterious walked in and confronted me. I sat huddled in abject terror before this Apparition, listened with tears in my eyes while I was told that a straight story about buzzing metal with bugs inside it would simply s-m-e-l-l.

But link it up! Ah, yes! Draw in a nice girl and make her go haywire for no apparent reason. . . . Um—yes. Make even *her* buzz! Why not? I stood erect, looked the Apparition in the eye, and told it to take a powder. I had the story.

Everything must buzz, girl included, and by a twist round I could tie up on the asteroids. I tried it, and the "Microbes from Space" came out of it.

Which only goes to show what can happen when you pour hot water in an earthenware jug.—*Thornton Ayre, Blackpool, England.*

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.

TRUE OR FALSE?

1. The solid that separates when a saturated chemical solution freezes is called a cryohydrate. *True.... False....*

2. Gay-Lussac's law states that equal volumes of all gasses under the same conditions of temperature and pressure contain the same number of molecules. *True.... False....*

3. Scientists estimate that the cost of finding 100 galaxies, each containing 100,000 million suns is only $52.00. *True.... False....*

4. Jupiter's satellite system numbers nine moons. *True.... False....*

5. The retrograde motions of the superior planets are caused by the earth moving past them in its orbit about the sun. *True.... False....*

6. A 200 inch telescope (reflecting type) is twice as powerful as a 150 inch. *True.... False....*

7. Lead is heavier than platinum. *True.... False....*

8. The Earth revolves at 1000 miles per hour. *True....False....*

9. Chlorophyll is necessary to photosynthesis. *True.... False....*

10. Friction is a requisite of life. *True.... False....*

PAIR THE FOLLOWING IN CORRECT ORDER

1. Mars—Rings.
2. Moon—Saturn.
3. Canals—Desert.
4. Gobi—Pygmies.
5. Australia—Crater.

SELECTION TEST

1. The inclination of the earth to the plane of the ecliptic is (a) 3°24′ (b) 1°18′ (c) 0°0′ (d) 2°29′.

2. Helium was first identified in the sun's spectrum in 1868 by (a) Lockyer (b) Cleve (c) Winkler (d) Scheele.

3. One of the following is a linear measurement: (a) firkin (b) cubit (c) minim (d) rood.

4. A parsec relates to (a) period of time (b) unit of length (c) cooking seasoner (d) genus felix.

5. Halite is: (a) a newly developed lifting gas (b) sodium chloride (c) tungsten-iridium steel (d) large snow flakes.

SCRAMBLED ASTRONOMY

Rearrange the following astronomical numbers on the left to conform with the word or words on the right, the units in parentheses ordinarily following the numbers.

1. 18.031	A. Of earth is oxygen (percent).
2. 18.50	B. 1° latitude at equator (miles).
3. 46.43	C. Interval of saros (years).
4. 86.8	D. Dist. of Pluto from sun (astro. units).
5. 20.47	E. Orbital velocity of earth (miles/sec).
6. 3.258	F. Constant of abberation secs. of arc).
7. 68.70	G. Acceleration due to gravity on Jupiter (ft/sec^2).
8. 39.5	H. Parsec (light years).

ANSWER PLEASE

1. You are a broadcast artist, and your wife comes to the studio to hear your performance. Your mother is listening in at home. You sing a song. Which will hear you first?

2. Radio station WBBM in Chicago is synchronized with KFAB in Lincoln, Nebraska. Do both programs go out at the same time?

3. You arrive at Colon, Panama Canal Zone to go through the Canal. Colon is on the Atlantic Ocean. You go on deck and hear the captain order the helmsman to steer east. Is he right?

4. You wish to fly from Reno, Nevada, to Los Angeles, California. What direction will you fly, roughly?

5. Is it true that hot water freezes faster than cold water?

SCRAMBLED SCIENCE TERMS

1. A planet. TASNUR ————.
2. A vegetable. ISHARD ————.
3. An astronomical measurement. CREAPS ————.
4. A branch of science. GOILBOY ————.
5. Something unnatural. YETHTINCS ———— ————.

STRIKE OUT THE WORD THAT DOES NOT CONFORM

1. Currant, volts, amperes, ohms, watts.
2. Alpha, one, a, omega, uno.
3. Positron, electron, cathode, proton, neutron.
4. Red, orange, yellow, green, lavender, blue, indigo, violet.
5. Argon, krypton, neon, helium, hydrogen, xenon.

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 in with the gang and have your say.

THORNTON AYRE

Sirs:

Before I do another thing I feel I must write and offer my sincere thanks to Mr. Fuqua for his magnificent cover painting to my yarn "World Without Women." I had envisaged a three-brained robot in my description of it—but Fuqua's painting of it far outstrips anything I conceived. The more I look at the painting the more impressed I become. The wealth of detail, the cogs, domes, and jewels, are a masterpiece of symmetry.

Thornton Ayre,
England.

● We're glad you liked the cover, because the readers liked it too, and your story, as you'll note from the final results published in this month's Merit Award. Congratulations!—Ed.

A DESIGNING READER

Sirs:

Your APRIL issue especially interested me because on the back cover there appeared a plane similar to one I had designed two years ago. The wings of my ship were slanted back, the nose was of the "eversharp type" streamline which I believe would be better at high speeds. The propeller of my ship was at the very tip of the tail (also an old idea) which should be just as effective as one revolving about the fuselage. They are the same in having no tail, the engine in the rear, the pilot in the nose and cannon for armament. The stories are all good. Your cover, a miracle, is good this month. Your back covers are of course always good no matter if slight errors are sometimes present. Why don't you have a contest every month for the subject of the back cover and let the readers submit their ideas and pick the best? Your artist could then paint the back cover from the winner's sketch.

Fred Hurter,
Red Rock, Ontario, Canada.

● Thanks for your remarks anent our back cover. It is interesting to know that you've designed a ship similar to this one. Your last statement looks so good to us that we are going to do something about it. You'll see an announcement regarding a contest very soon.—Ed.

APPROVES THE MERIT AWARD

Sirs:

I believe the merit award is a really good idea. It should result in better stories.

Everything is just right although a little more humor and science would be a good idea.

S. S. Sowers,
4115 East Slauson Avenue,
Maywood, California.

● Your letter is typical of hundreds. The Merit Award certainly is proving a popular feature, both with readers who like to vote, and with writers. Your editor's only regret is that he sees clipped coupons floating before his eyes even in his sleep. —Ed.

THE VERY BEST NEWS

Sirs:

Just this minute had time to write to you about the latest issue of the "Aristocrat." All O.K. Gave me my usual good day of relaxation and reading . . . THANKS FOR BUYING "THE NEW ADAM!" That is the very BEST news of the year. A friend says that he will like the story even if it is rotten, because in buying it you prove your intention to give the readers what they want. Please do not shift the story over to one of the new mags you are starting . . . that would be a mean trick. . . . And don't stretch it over TWO parts. Try to get it all in one issue. Here's hoping all the pretty girls in Chicago give our swell Editor a kiss as his just reward.

James Michael Rogers II,
2006 Court St.,
Muskogee, Okla.

● When you get the New Adam, it will be complete, we assure you. There will be a definite announcement concerning our plans in the near future. Keep your eyes peeled. Your editor likes that idea of all the pretty girls, but he's rather dubious as to what a *certain* girl would say about that—so if all those pretty girls just read the magazine, he'll feel happier, and safer!—Ed.

REAL WHITE INDIANS

Sirs:

Just read Eando's apology for "Valley of Lost Souls" in the February issue, and want to assure him that no apology is necessary.

Over ten years ago, it was my pleasure to come into intimate contact with the real White Indians, who are members of the Tule tribe along the San Blas Coast of Panama, and I can assure all readers that "White Indians" are no mere figment of the

imagination

To anyone interested in going into the matter further, I can only recommend the book "White Indians of Darien," by Richard Oglesby Marsh (Putnam, 1934).

Paul Vogenitz,
Box 325, B. F. Sta.,
Washington, D. C.

● Here's corroboration for you, Eando. Your story was not as fantastic as you might imagine. Maybe the whole thing is true, eh?—Ed.

Sirs:

The first letter to AMAZING STORIES, although I have been reading the magazine since its inception, is prompted by the newspaper clipping which you reproduce in Mr. Tofte's letter in the April issue. The statement in the clipping seems to me to rest upon fundamental misconceptions of both Hitler's rise to power and the nature of the German language.

Any good book on German phonetics (Sweet, Vietor) will inform you that the average pitch of German speech is far higher than it is in English. I have listened very carefully to Hitler's speeches as broadcast on the radio (which is the way the majority of German listeners hear them), and I don't think his pitch is much higher than the average pitch of a German political orator or actor. It is not the sound of his words, but the constant repetition of the same phrases that has affected the German people.

And while I'm about it, let me add that the best story in the April issue was easily "The Deadly Paint of Harley Gale," mainly because of the humorous touch. It could have been even better had Repp not got a bit too serious toward the end.

As to "The Strange Flight of Richard Clayton"—Pfui. It could have been so easy for Clayton to regain his sense of time by performing some simple act which always takes about the same time, like tying a shoelace. Of course, the excuse might be offered that it was the vibration that aged him so rapidly, but then the point of the story is lost, which, I assume, was the relativity of time. There are a thousand ways of telling time besides using a chronometer. With an ordinary pot, or a wet rag, he could have made himself a water clock.

Harold Benton,
c/o Universal Table Pad Co.,
26 Journal Square,
Jersey City, N. J.

● Your comments on the power of Hitler's speeches are interesting. But the fact has been determined by instrument that Hitler has a certain explosive inflection not apparent to the ordinary listener as such, but distinctly registered on delicate instruments. As to repetition, you are absolutely correct there. The human mind is sadly lacking in the ability to resist impressions made by repetition.

As to "The Strange Flight of Richard Clayton," there certainly are a thousand ways of telling time. But on such a space ship as Bloch described, those means were lacking. Your mention of a water pot, or a wet rag is good, but where would you get either? And tying a shoelace. How long could you do it, without going mad? And how would

you know how long it *does* take you to tie it? You've no means of telling. Memory of time? I might come right back at you with a "pfui," because time, in memory, simply does not exist. I have absolutely no conception of how long the past years of my life were. They seem but moments.

Nor was it vibration that aged Clayton. It was his own mind, living years in days. Who can say to exactly what extent mind does control the body? Illusion is a peculiar thing.—Ed.

AMATEUR CORNER?

Sirs:

Do you think an amateur authors' corner would be appropriate in AMAZING STORIES? I like the idea. Ask the readers what they think about this. Many amateur writers produce well-written stories having an interesting plot. But they haven't much chance since readers always want big names and high-class stories. Then too, editors prefer the work of professional authors to that of an inexperienced author, unless, of course, the ham is unusually good. Remember, all professional writers were amateurs once, and it is only by giving amateurs a chance that professionals are produced. Don't think that the stories of amateurs are so terrible. In plot, development, and interest, some of them compare favorably with the stories of professional writers. So, why not? I think the readers of AMAZING STORIES would find an amateur authors' corner very interesting.

Tell Krupa to make his girls less horror struck. The lines in forehead, bulging eyes, and open mouths detract from their intended prettiness even if it is necessary. Aside from this, his drawings are swell.

Chester Geier,
2319 McLean Ave.,
Chicago, Ill.

● What about Isaac Asimov, Mark Reinsberg, W. Lawrence Hamling, etc., etc.? We present stories (first stories) by amateur authors very often. They don't need a corner, because they do, as you say, write stories good enough to get by on their own merit. No matter how rank an amateur, we accept any story we like, regardless of name, or reputation. Certainly we like names—but first, we like good stories. And equally certainly, any amateur who writes one will have it accepted.

We'll tell Krupa about making his girls more beautiful. You have a good point there.—Ed.

IMPOSSIBLE?

Sirs:

Fuqua's covers are good . . . but that's all. His colors are too vivid and clashing to warrant rating him as science fiction's top cover *artist*. As for detail . . . well, either Paul or Wesso can draw circles around Fuqua when it comes to painting really complicated scenes. If you take time to look at some of the old WONDER and AMAZING covers, you'll surely see what I mean. . . . Fuqua's cover for this issue is the best-looking cover he's done yet, though the robot looks like a walking planetarium.

You remark in *Discussions* that Krupa uses only

a brush in his drawings. Yet, earlier (a few issues back—or maybe more than a few) you remarked how Krupa and Fuqua used *only* pen and ink . . . no pencil work. I'm inclined to believe the latter statement, for I don't see how Krupa could do the work he does with a brush. It's practically impossible.

I'm looking forward to the next issue and to FANTASTIC ADVENTURES.

John V. Baltadonis,
1700 Frankford Ave.,
Philadelphia, Penna.

● When I spoke of Fuqua and Krupa using only pen and ink, I was grouping them. Both use ink, but only one uses pen. Krupa has never touched pen to any illustration in AMAZING STORIES. I have watched him work, and his delicacy of touch is truly amazing. I assure you it not only is possible, it's fact.

As for hack issues, we *have* compared them. And nowhere do we find any such finely executed gadgets as Fuqua has achieved in his April cover. True, Paul did fine work in illustrations like "War of the Worlds" and many others. And in recognition, we present this month a Paul illustration on our hack cover. It depicts the future space suit, both in cut-away, and pictorially. We hope you like it.—Ed.

MORE ABOUT COVERS

Sirs:

I still claim that the art work can stand improving. Now, who in his right mind would construct that imposing conglomeration of mechanical apparatus on the cover, and then paint it *red?* Seems as if Mr. Fuqua isn't happy unless he smears the cover full of various shades of red. Another thing, the story says very plainly that the affair is found some fifteen miles below the surface of the moon, while the cover scene is on the surface. Tsk, tsk! Furthermore, Perry Mills has a hideous taste of what to wear. Red pants and that brilliant blue shirt! Oh, well. However, I will admit that Fuqua does get fine detail in the cover, and shows the highlights very cleverly. But, you still have too much wording on the cover.

Robert Jackson,
239 W. State St.
Barberton, Ohio.

● In AMAZING STORIES we have three colors to work with, in creating covers. Red, yellow and blue. The problem is to use these colors as best we can to attract attention to the magazine on the newsstands. That's the purpose of color covers. Red is a striking color. It can be seen. Therefore, we do use a lot of red.

Can you imagine this same cover, with its black background, a dull gray metal robot, a man in dark brown trousers, and a dull gray shirt? What would you see? We could have made the robot blue or yellow, our only other colors? All would have been acceptable, and just as glaring, although we admit the blue would not stand out against the black as strongly. But isn't blue metal just as

unusual as red?—Ed.

A SOUND BALANCE

Sirs:

You must be congratulated for having authors like Fred Kummer, Edmond Hamilton, Bradner Buckner, and Ed Earl Repp.

Thru interaction of opposed trends AMAZING STORIES has at last reached a new development from where it can be expected to go forward to a marked leadership—one that before too long may usher in the age of science fiction literature and dramatics, an age in writing which will inspire the material reflections of a wealth of humanity helping inventions. AMAZING STORIES' inclusion in the time capsule was prophetic!

Our magazine is at last coming to a sound balance:—placing its themes for the most part in human interest scenes, nevertheless conscientiously accurate in its science, unafraid occasionally to go far into the future or into environments little related to our own, containing as well some short articles and drawings connected quite closely to the present, ever in touch with its readers thru its lively "Discussions" columns, AMAZING STORIES is achieving a place of accelerating importance.

It is no coincidence that A. S. represents for the most part democracy-conscious authors and supporters—defends forward looking people living in political freedom where science flourishes best, rather than aggressors and aggressor interests who consider science only a tool for war and personal acquisition and not as an aid for a people's welfare.

Frank Lincoln,
1679 Haight St.,
San Francisco, Cal.

● Our writers are quite proud of their part in pointing the way toward future betterment, and true scientific Americanism, ideals, purposes, are naturally reflected in everything they write.—Ed.

METHUSELAH

Sirs:

Did you know that Methuselah, oldest man in the Bible, died before his father? The length of years in Bible times were the same as ours. According to Dr. Strath-Gorden (formerly, I believe, of Columbia University) in the time of Genesis there existed about the earth a layer of water vapor, or "curtain," which shielded the inhabitants from the actinic rays of the sun. Thus, they lived in a more or less aqueous surrounding. This, he says, would promote a slower metabolic rate than we now have, and cause not only longer lives, but a much greater stature of the people. Indeed, we have a remarkable confirmation of this theory in the book of Genesis, for not only does it ascribe long lives to the people, but actually says "There were giants on the earth in those days" (see Genesis, VI, 4). This would appear to indicate that there is something to this theory.

I am surprised to see that Jack Darrow (of all people) is complaining that AMAZING STORIES is dated two months in advance. The reason for it,

Jack, old boy, is this: if AMAZING puts out an especially bad issue (not likely, to be sure) they can leave it on the newsstands two months instead of one, so as to be sure to sell enough copies to be able to afford to pay ye ed. enough for his morning doughnut and *café noir.* Sort of an ace-in-the-hole, you see. You must admit that it's a darned clever idea.

Langley Searles,
19 East 235th St.,
New York, N. Y.

● We are surprised ourselves, about Methuselah's old man. How about enlightening us further about when he died, and how old he was? Your comments are intensely interesting, and we thank you for them.

As for a bad issue, it'll take more than that to make the ed. eat a doughnut in the morning. You see, he doesn't like 'em, and besides, the hole is so impractical.—Ed.

OLD FAVORITES

Sirs:

Whatever has happened to Joe W. Skidmore's atomic protegés, "Posi and Nega"? It has been such a long time since they have cavorted in AMAZING's pages, that I think Mr. Skidmore owes us an explanation. In fact, it has been aeons since any of his work was published. You too, Neil R. Jones, seem to have deserted the amiable Professor Jameson. I wonder how many of the readers remember when the first Jameson story was published in the large-sized AMAZING STORIES? And how many have since followed his adventures in the "Hydrosphere," on the "Twin Worlds," and on his memorable return to earth some 4,000,000 years after "leaving" it?

One of the first science fiction stories I read was "Invaders From the Infinite" in an early Quarterly. That issue also contained a story entitled "The Hole That Grew" of which "The Flame From Nowhere" is reminiscent. One of chapters to John Taine's serial "The Time Stream" was also given. You may at first wonder why I should be writing about this "old stuff," but I have an idea. Actually it is not mine, but an old one of AMAZING STORIES. Years ago, the editors would list several science fiction stories in booklet form. These sold for about ten cents, but they were not a magazine —just booklets. Now why not do this again? In this way readers could get such classics as "The Skylark" series, and others not ordinarily published. What do the readers and the editors of AMAZING STORIES say to this? For one thing, these booklets were very unobtrusive, being easily slipped into one's pocket to be read on the bus or train. I presume you still have the copyright on those stories, and authors surely write more than can be printed in the regular issues.

One Page 115 of Baker's "Astronomy," the figure given for the amount of the moon's surface visible at one time or another is 59%, quite a deviation from the nearly three-quarters quoted by you in

answer to Arthur Jessup's question.

Wilbur J. Widmer,
679 Park Avenue,
West New York, N. J.

● We regret to inform you that Mr. Skidmore has gone to join those others who now write for another sphere, a more perfect world. But those two strange characters, Posi and Nega, will continue to live in our memory as creations of a fine writer who no longer is with us.

As for Professor Jameson, Mr. Jones has been trying to think up adventures suitable to our new story policy, but hasn't been having much luck. However, we still bold out hope for a satisfactory Jameson adventure. But if he has reached the end, at last, of his ageless adventuring, perhaps we must be reconciled to the death of even a fiction character who has lived for so many uncounted eons.

It is true that booklets such as you mentioned were published. But rather than publish just individual booklets, we have created an entirely new magazine to take care of the good stories our authors write, and which we simply can't turn down. We refer to our new Companion Magazine, FANTASTIC ADVENTURES. You can still secure the first issue at your newsstands. But we doubt very much if you'll get it into your pocket! —Ed.

AUTHORS COMING

Sirs:

There's only one last mile to go in bringing AMAZING STORIES to its former peak. This one last mile is not difficult however. The authors' ideas are great, their wording is good but why can't they omit some of those lousy combinations of "Handsome Harry—Deanna Delovely" junk. It's being overdone and my friends and I think it's about time you let up a bit. Especially when it comes to an interplanetary yarn. Buck Rogers originated in AMAZING STORIES in 1928 in a story called "Armegeddon—2419." The story went over big, but what happened? It got to the comics and now poor Buck Rogers is running in a twelve-part serial at a neighborhood theatre with that dizzy dame of his.

Please try to dig up some stories of the late Stanley Weinbaum. Other authors that I appreciate to a great extent are Harl Vincent, Ralph Milne Farley and Keller. I wish we could bave Thornton Ayre a little more often.

Thanking you for AMAZING STORIES—THE KING OF THEM ALL.

Harold G. Schaeffer,
1320 Fulton Ave.,
New York, N. Y.

● We've got stories by all except Keller on tap, and we promise him too, in the near future.—Ed.

Remember, readers, Discussions is *your* column, and the editor isn't afraid to wade in and join the battle. Let's see some action.

QUIZ ANSWERS

(Quiz on page 135)

TRUE OR FALSE?

1. True.
2. False. This is Avogadro's law.
3. True. (The Sky, Hayden Planetarium, Nov. '38 page 30).
4. False. Two new ones were recently discovered at Mt. Wilson.
5. True.
6. True.
7. False.
8. True.
9. True.
10. False.

PAIR THE FOLLOWING IN CORRECT ORDER

1. Mars—Canals.
2. Moon—Crater.
3. Gobi—Desert.
4. Australia—Pygmies.
5. Saturn—Rings.

SELECTION TEST

1. c
2. a
3. b (a cubit is equal to 18 inches).
4. b
5. b

SCRAMBLED ASTRONOMY

1. C
2. E
3. A
4. G
5. F
6. H
7. B
8. D

ANSWER PLEASE

1. Your mother, because the speed of radio waves (186,000 miles per second) is greater than the speed of sound (1080 feet per second at 70 degrees).
2. No. There is a time delay on the Kansas circuit to take care of the difference in time (.023 second) between Chicago and Kansas City.
3. Yes. The Pacific is east of the Atlantic at the Canal.
4. You will fly east.
5. No.

SCRAMBLED SCIENCE TERMS

1. SATURN.
2. RADISH.
3. PARSEC.
4. BIOLOGY.
5. SYNTHETIC.

STRIKE OUT THE WORD THAT DOES NOT CONFORM

1. Currant. This is a berry.
2. Omega. Omega is the end.
3. Cathode. All the others are atomic particles, or waves, or electric vibrations.
4. Lavender. All the others are spectrum colors.
5. Hydrogen. All the others are rare gases.

CORRESPONDENCE CORNER

Eileen Foran, Coolcuslaugh, Killarney, Cokerry, Ireland would like correspondents. . . . Peggie Brooks, 5 Henn Street, Killarney, Cokerry, Ireland is another Irish Lassie with the same request. . . . Carl Wick, Reliance, South Dakota, is 21 years old, wishes to exchange letters with either sex, from anywhere. . . . F. Toschetti, 29 Cathcart Street, Greenock, Scotland, would like correspondence with science fiction fans anywhere, also interested in aviation and wants old copies of AMAZING. . . . David Sissons (17) of 10 Porth Way, Newquay, Cornwall, England, is interested in wireless and would like to communicate with others so interested. . . . Mr. T. Bottomley, 26 Bradford Road, Trowbridge, Wilts, England, would like to correspond with feminine readers. . . . Gerald Hamm, Cullendale, Ark. would like to correspond with persons interested in Esperanto. . . . Mrs. G. Dean would like to correspond with both women and men of 38 or over. Her address is Sunnyside, Waycross, Ga. . . . Sol Bass, 1843 N. 33rd St., Philadelphia, Pa., would like to sell or exchange his almost complete collection of AMAZING for foreign stamps. He would also like to correspond with foreign readers. . . . Vivian Cass, 36 Ireland Street, West Melbourne C3, Victoria, Australia, would like to hear from readers interested in science fiction, cycling or photography. She's 23. . . . Walter C. Liebscher, Co. 607, CCC, Glenview, Illinois, wishes to secure the first copy of Marvel Science Tales. . . . Robert Galluzzo, 3230 Olive Ave., Chicago, Illinois, will swap 25 foreign stamps for each science fiction magazine sent him. . . . Mr. George Parke, (address unknown!) will appreciate pen pals from all over the world. (maybe he'll get 'em if he sends the ed. his address to publish. How about it, GP?). . . . Howard Hackett, 201 West 111 Street, New York, N. Y., would like to start an "Amazing Stories Club." . . . Blaine R. Dunmire, 414 Washington Ave., Charleroi, Pa., would like to secure for his collection, copies of Oct. '37 TWS, Dec. '36 TWS, July-Aug. AS of '32 and '33. . . . Cecil Purdy, Cullman, Ala., would like to purchase old AMAZINGS. . . . S. G. N. Ashfield, 27 Woodland Road, Thornton Heath, Surrey, England, has some 300 back issues for sale. . . . Jeff Angell, 14 St. Ursula Grove, Southsea, Hants, England, wants pen-pals in Hollywood. Age 23. Interested in science fiction, politics, films, jazz. . . . Martin Alger, Box 180, Mackinaw, Mich., wants copies of AMAZING STORIES of Oct. '37 and before.

FUTURE SPACE SUIT

(SEE BACK COVER)

CONCEIVED AND DESIGNED BY PAUL

Our back cover this month depicts the artist's conception of the type of space suit that would be necessary to permit man to go into the void

PERHAPS as much as ninety percent of science fiction has been built around space travel, and adventure on other planets and in the void between them. We have had stories based on almost every conceivable world, and in hundreds of different situations in the depths of space. We've come almost to a standardized universe wherein man travels and adventures, lives and loves, hates and dies, in quite a logical and convincing manner. To many who read futuristic fiction such as AMAZING STORIES presents, there is nothing fantastic about space travel. Between it and reality exist only a simple matter of sufficient time until it comes about.

During our adventures in space and on other worlds, we have encountered conditions vastly different from those on earth. And when an author speaks of a space suit, we take it for granted. They are needed in space.

Artist Frank R. Paul has created on our back cover this month, his conception of the mechanics of this future space suit, so necessary to travel between worlds, and on planets unsuited to our physical make-up. He has shown in detail all the workings of such a suit, and shown it in use, as it actually will be used in venturing from a ship into the utter cold of space.

Let us consider first the conditions in space. Space is empty, except for meteorites, and possibly scattered particles of dust. There is no air to breathe. There is no pressure, such as we endure under our blanket of atmosphere. Nor is there any heat, since heat is a material phenomenon, and in space there is no matter, therefore cold, since cold is an absence of heat. There is also no gravity, except that exerted by distant bodies, too negligible to be felt.

Then, what must our space suit have to enable a man to live under such conditions? First, it must protect him against the cold. Thus, we have an inner suit of heavy material, capable of retaining an inner pressure of 16 lbs. to the square inch, and therefore a normal atmospheric balance. This material, being a heat conductor, must be separated from the other suit by an insulating material, partly cellular and partly heat proof. Several types of gases could be used for this purpose, which would retain body heat, and keep it from radiating away at a slow rate into the void. The outer suit would be metal, much as is a diver's suit. In space it would be weightless.

In venturing from a ship in mid-space, the space traveler would need to retain contact with the ship by means of a pay-out line. However, in the event that he severs himself from contact with the ship, and drifts helplessly away, the suit must be equipped with reaction pistols, which would enable him to move by firing in the direction opposite that desired. Any motion once started would be constant.

The outer suit of metal would prevent the inner suit from bursting from air pressure.

Next, we would have to supply the suit with a breathable air supply. This would be obtained from oxygen tanks built directly into the suit. Meters and controls for its delicate regulation would be visible constantly before the wearer's eyes, since great danger exists in wrong mixtures and pressures. Too much oxygen could cause hysterics, too little, unconsciousness. Both would be fatal.

Waste air would have to be withdrawn from the suit, and purified by means of yet another tank built into the suit, which would remove carbon dioxide, and prepare the air for rebreathing. It would be impossible to use a constant supply of new air, since only a limited quantity can be carried in the space ship, and there exists no source of replacement in space. Journeys through space would take much time, and air would therefore need to be used over and over.

Good circulation would be necessary inside the suit to take care of body respiration and remove expelled moisture from the pores which otherwise might set up an unbearable itching.

The helmet of this space suit would need to be unbreakable glass, insulated by a double layer of non-conducting gases, and ultra-violet ray proof, to prevent serious burn from the direct rays of the sun.

Joints would be constructed so as to be flexible to permit free movement. Fingers would be limited to three, just enough to permit grasping of objects, due to difficulty of insulation of small parts.

Feet would be equipped with small electro magnets, powered by tiny batteries, to be used in maintaining contact with metal surfaces when desired.

Communication would be achieved by means of built in microphones, and by portable radio units built into the helmet.

New! Lee COLOR-MATCHED SHIRTS AND PANTS

Style ★ Comfort ★ Long Wear!

For Vacation, Sport or Hard Summer Work

...you'll find Lee Color Matched Shirts and Pants can take it!

Genuine Agan Jeans, Treg Drills and Twills are exclusive Lee fabrics in both weave and dye. They're fade proof, Sanforized-shrunk—then *tailored to fit.*

Remember, Lee combines style and comfort with rugged wear. Twelve popular shades—sage green, dusty green, livery green, forest green, sun tan, smoke tan, marine tan, powder blue, navy blue, shantung, sand and white. See your Lee dealer or mail coupon.

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A Perfect Fit for Every Build

Lee
Color-Matched
SHIRTS & PANTS
Sanforized-Shrunk

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Send me Lee color-matched, color-fast fabric swatches—also name of my nearest Lee dealer.

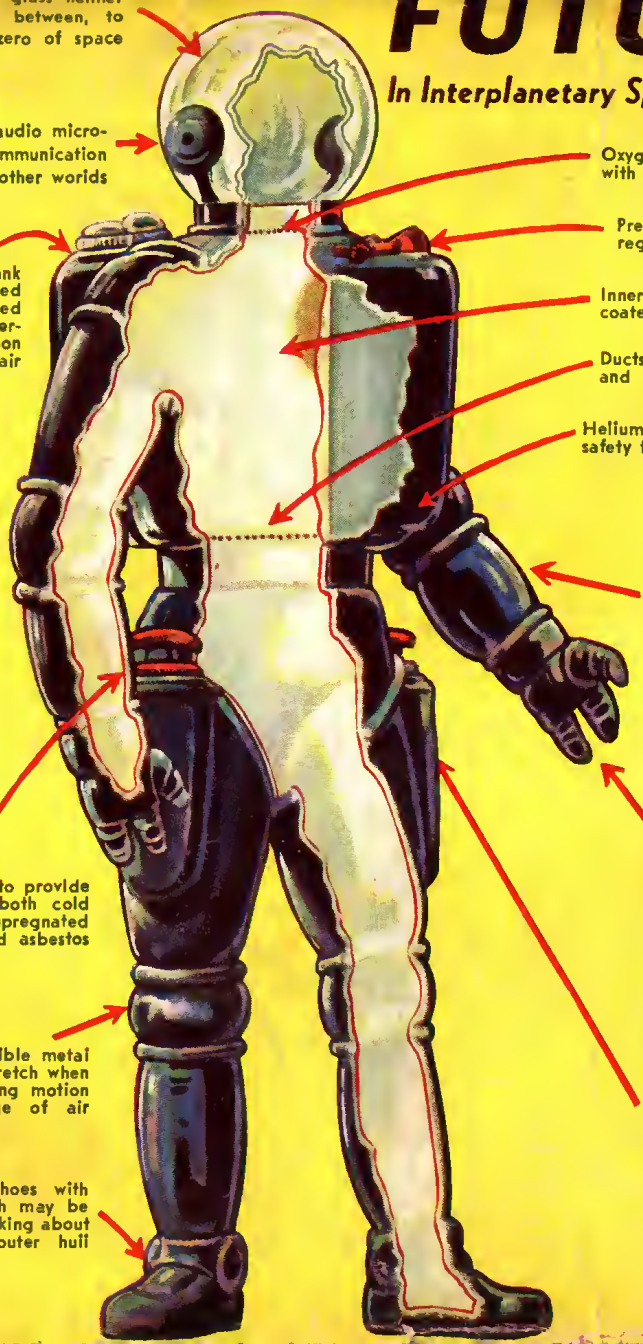
Name.....

Address.....

Town.....State.....

FUTURE SPACE SUIT

In Interplanetary Space A Man Will Need A Complicated Suit To Avoid Instant Death



Unbreakable double glass helmet with insulating gas between, to keep out absolute zero of space

Two-way radio and audio microphones to permit communication in the void and on other worlds

Compressed oxygen tank to provide controlled air supply. Equipped with purificator to permit removal of carbon dioxide from used air

Double inner lining to provide protection against both cold and heat. Gas impregnated cellular material and asbestos

Joint flanges of flexible metal which spread and stretch when joint is bent, allowing motion without any leakage of air

Heavily insulated shoes with magnetic coils which may be used to facilitate walking about on the inner or outer hull

Oxygen ducts to supply wearer with constant stream of pure air

Pressure gauges and meters to register air pressure and purity

Inner suit, composed of rubber coated, air-tight canvas and silk

Ducts to remove carbon dioxide and accumulated body moisture

Helium and other gases to insure safety from bends and blood clots

Outer suit composed of metal strong enough to withstand vacuum of space

Three-fingered space gloves to permit clumsy handling of objects in utter cold of space

Propeller guns, to provide reaction, and permit moving about, otherwise wearer would float helplessly. See page 145 for complete details.