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STARTLING STORIES

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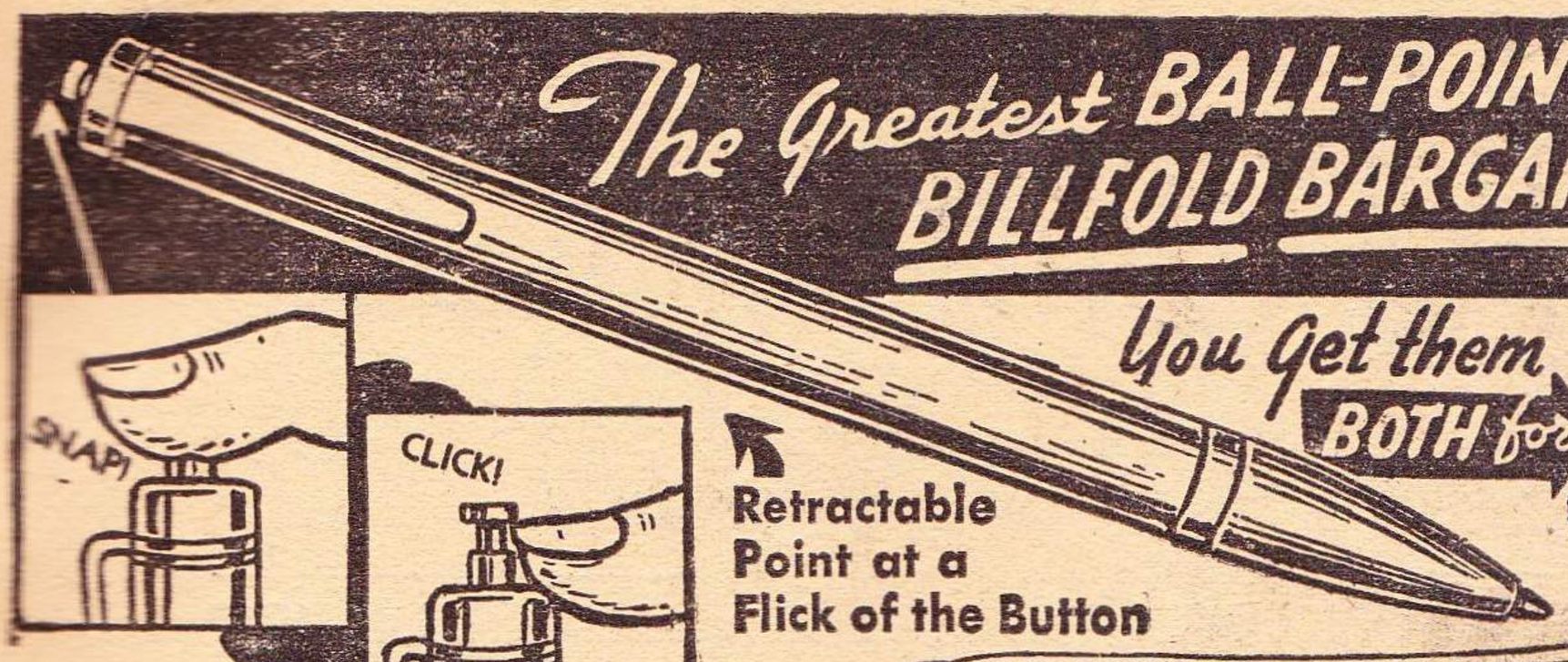

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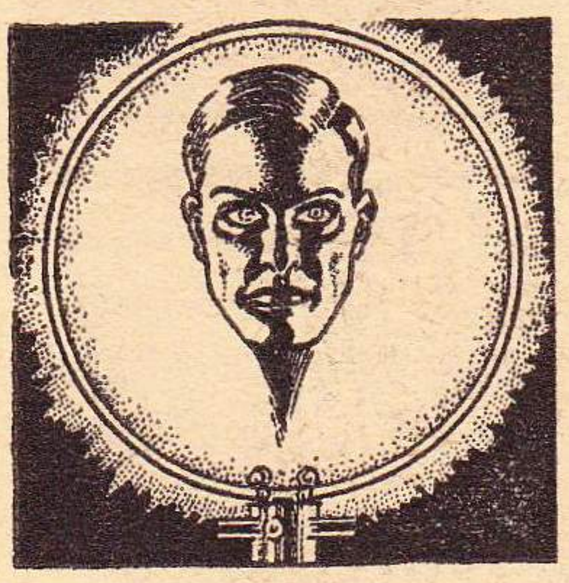
STARTLING STORIES

Vol. 15, No. 3 A THRILLING PUBLICATION July, 1947

An Amazing Complete Novel



The Kingdom of the Blind

By GEORGE O. SMITH

Psychologists said that James Forrest Carroll had lost his mind — but they were forced to admit that he alone could save the Solar System from fearsome outer menace! 11

Short Stories

THE RING BONANZA.....Otto Binder 57
Prospectors may some day comb relics from Saturn's rings

THE LIFE DETOUR.....David H. Keller 64
A Hall of Fame classic reprinted by popular demand

DREAM'S END.....Henry Kuttner 80
Dr. Robert Bruno risks his life to cure a patient's psychosis

PROXY PLANETEERS.....Edmond Hamilton 88
A pair of scientists fall under a radio-active hypnotic spell

SUPER WHOST.....Margaret St. Clair 97
If you ever want a free trip to Mars, here's what to do!

Special Features

THE ETHER VIBRATES.....The Editor 6
A department for readers, including announcements and letters

OPERATION ASDEVLANT.....Lt. Comdr. Warren Guthrie, USNR 71
In a future war, our greatest menace may be undersea raiders

SCIENCE FICTION FAN PUBLICATIONS.....A Review 109

Cover Painting by Earle Bergey—Illustrating "The Kingdom of the Blind"

STARTLING STORIES, published every other month by Better Publications, Inc., N. L. Pines, President, at 4600 Diversey Ave., Chicago 39, Ill. Editorial and executive offices, 10 East 40th St., New York 16, N. Y. Entered as second class matter November 22, 1946, at the post office at Chicago, Illinois, under the act of March 3, 1879. Copyright, 1947, by Better Publications, Inc. Subscription (12 issues), $1.80; single copies, $.15; foreign and Canadian postage extra. In corresponding with this magazine please include your postal zone number, if any. Manuscripts will not be returned unless accompanied by self-addressed stamped envelope and are submitted at the author's risk. Names of all characters used in stories and semi-fiction articles are fictitious. If the name of a living person or existing institution is used, it is a coincidence.

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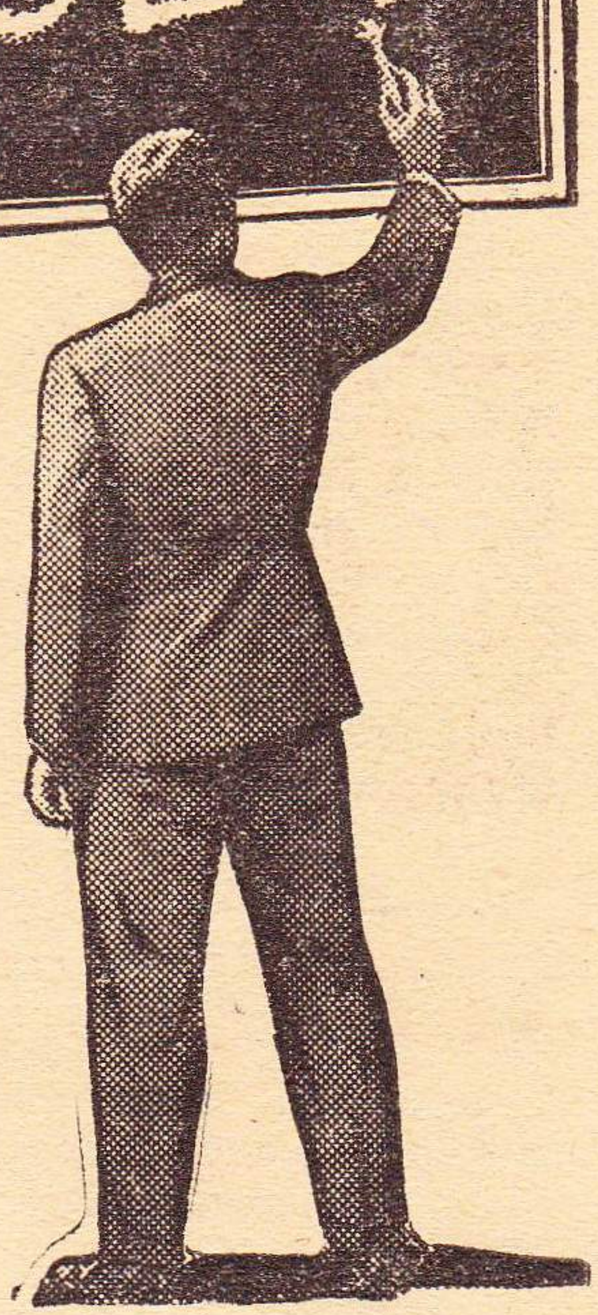

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WITH summer already upon us Labor Day is not far off—and Labor Day weekend, this year of grace 1947, is the date set for the Fifth World Science Fiction Convention in Philadelphia—an event more generally known as the Philcon.

While the City of Brotherly Love (to put it into English) is generally regarded as a staid and sober metropolis, second only to Boston in this regard among this country's major population centers, it is also a hotbed of organized science fiction fan activities. In this respect it runs a very close second to the Los Angeles district and is willing to argue the point at the drop of an Angeline.

As a matter of little-known fact the first recognized science fiction convention of any import was held in Philadelphia in 1936 and was the occasion of considerable rioting in the streets (metaphorically speaking, of course). So, after eleven years, Philadelphia is stepping out with the Fifth World Science Fiction Convention come this Labor Day weekend.

The first of these big rallies was held in New York City on the 2-3-4 of July, 1939, and drew an enthusiastic attendance of several hundred stf devotees. A year and two months later the second World Convention took place in Chicago. And the Fourth of July, 1941, found Denver the scene of the third big meeting.

The Pacificon

Pearl Harbor and the resulting war and transportation difficulties put an end to such national gatherings until last summer, when Los Angeles blossomed out with the Pacificon. Inevitably, what with the growth of interest in science fiction and with everything that happens in Southern California, it was the biggest to date.

And now the Philadelphia Science Fiction Society is sponsoring the second postwar meeting. As usual, it is planned to have a large and heterogeneous collection of authors, and editors, to say nothing of semi-professional fans, on hand for the handshaking and speechmaking that accompany all such fiestas.

Headquarters for the Philcon will be the Penn Sheraton Hotel, formerly the Hotel Philadelphia, at 39th and Chestnut Streets. The opening session will begin at 1 PM, Saturday, August 30th. There will be afternoon and evening sessions on Saturday and Sunday, and afternoon sessions on Monday and finally the traditional fanquet or fan banquet on Monday evening.

The Philcon's Program

Entertainment, exclusive of the above-mentioned fanquet, will include an auction of books of stf interest and of original illustrations from magazines such as this one and its companion, THRILLING WONDER STORIES. There will be various sorts of entertainment, amateur and professional, and lots of talk, talk, talk.

So those of you who have inclination and opportunity to attend this convention might drop a line to A. E. Waldo, 4048 Lancaster Avenue, Philadelphia, Pennsylvania. Mr. Waldo is in charge of the more or less vital matter of hotel and room reservations for the gathering and can give full details of what to expect.

If you have the time and can get there and like science fiction, you will inevitably find the Philcon worth your while. Selah!

Alien Life

In the March issue of this magazine we wrote a short editorial on the possibility of alien life on various other planets whose discovery may be made possible within measurable time by current scientific developments.

For some reason, this evoked a number of letters concerning the statement (not made by us) that because Jupiter apparently has an atmosphere of spirits of ammonia somebody said there could be no life there. Without exception the missivists took issue with this statement and insisted that merely because a form of life breathes spirits of ammonia doesn't mean it is not a form of life.

What all of this proves we do not pretend

(Continued on page 8)

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THE ETHER VIBRATES

(Continued from page 6)

to understand—but it may give some of you an idea of the sort of thing that crosses our desk from time to time. If any of you can make sense out of it, please let us know. We once knew a young lady who could breathe little save ammonia, but it turned out that her corsetiere was to blame.

OUR NEXT ISSUE

SEPTEMBER, with its autumn equinox, is generally accepted as a month of sudden showers. So it is altogether fitting that Keith Hammond should come up with a novel of man-made rain as an instrument of revolution against a too-perfect future state.

His entire life patterned by a madman named La Boucherie, Mart Havers is the human instrument of revolt against a technocratic society. He is, despite his careful training, a reluctant revolutionist.

But La Boucherie has laid his patterns too deeply and cunningly to be denied. And so, in spite of himself, Havers is forced to open conflict with the society that has no place for him.

Readers of other Keith Hammond stories in STARTLING, notably VALLEY OF THE FLAME, will look forward eagerly to the newest full-length novel to stem from his gifted typewriter. So man weather stations and keep a watchful eye out for LORD OF THE STORM. It is a big-time story for what should be one of the finest issues in SS history.

More good news for science fiction lovers has turned up in the Hall of Fame—where, next month, we reprint for the first time a truly great story by one of the most justly celebrated of stf authors, the late Stanley G. Weinbaum. THE CIRCLE OF ZERO is one of his best and one which will leave the reader with the satisfaction of having been stimulated by ideas which will be long in leaving him.

Also present, of course, will be a full complement of short stories and ye ed with this department and the Fanzine Review. Try and make it!

ETHERGRAMS

SAVE for the baffling comment anent the ammoniac atmosphere of Jupiter already mentioned, it seems to us that the current crop of letters is unusually mild in regard to controversial material—and if anyone can figure a controversy out of *that*, by all means let him.

However, the missivists are out in force and brickbats are about as usual. So we don gas mask and steel helmet and get at them.

HE WANTS SPACE SHIPS
by Millard Grimes

Dear Editor: That's a pretty fair frontispiece you have on the March issue. Now, Bergey, don't get mad, Belarski just had a better scene to illustrate. By the way, Sarge, since you keep harping on the fact that your usual type of covers sell mags, I guess the Summer 1945 ish (the one with the beautiful rocket ship on the front) should have been the lowest selling ish of SS that you have ever put out.

Speaking of circulation (we were, I think) I sometimes wonder what makes a guy or gal buy two issues of SS in a row after he or she has read the novel in the first unless he or she is like me. I buy every copy that comes out just for collection and because I know that once in a while you print something worth reading.

But what about the occasional buyer who is just looking for something to read for enjoyment and picks up one issue of SS and buys and reads it. If he liked it he will probably look for more issues of the mag in the coming months. But what if he picks up an issue and has to read some novel like "Other Eyes Watching" or "The Solar Invasion" or most any of the other long works you've been publishing since the close of 1943.

Since 1943, to me, there have been only three novels that were really good and that I would be willing to give the amount of time and patience that goes into reading a work of that length. The three were "Shadow Over Mars," "Red Sun of Danger" and "The Dark World", and one of them is a fantasy, something I heartily disapprove of in a mag of sf as yours is supposed to be. I have not yet read the two issues of SS that have been published this year and for all I know, "Star of Life" and "Laws of Chance" may be excellent pieces.—*2307 10th Street, Columbus, Georgia.*

Well, as long as you buy them for some purpose, Brother Grimes, we thank you. But you *had* better catch up on your reading before landing on us so hard. The general level of wartime stories, long and short, ran well below that of pre-war years and below that of the work we have been receiving since V-J Day.

As for space ships, they simply haven't got human interest and this is not a magazine of popular applied science, although one group of our readers would seem to want it so. There are plenty of excellent magazines long and well established in this field for such as likes them.

SHE GETS A KICK OUT OF GWEN
by Patti J. Bowling

Dear Editor: Liked the March issue of SS, however, there *were* a couple or three things that could have been better. THE LAWS OF CHANCE by Leinster was a most interesting and well-written story. Believe it or not I haven't one single gripe about the whole story and as for Finlay's illustrations, swell. The H of F Novelet I didn't like so well. The style of writing was rather stilted and on the whole, too noble for words.

THE SOMA RACKS by St. Clair was a nice little story but I still can't see much point to it. Could it have been too subtle, do you think? STELLAR SNOWBALL by Barrett was another nice little story, not much to it, but well written. On the whole THE LAWS OF CHANCE takes first place.

The Ether Vibrates was up to par. Do like your

(Continued on page 102)

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WHEW! THAT'S "PLATINUM ROW". I'D BETTER CLEAN UP FIRST

THANKS FOR THE RAZOR, JOE. **THIS BLADE'S A HONEY!**

THIN GILLETTES ARE ALWAYS LIKE THAT • • • PLENTY KEEN AND LONG-LASTING

• • • AND TODAY, AT LONG LAST, WE FOUND THE MISSING HEIR. HIS NAME • • • LARRY RICHMOND!

GREAT STORY • • • WHY, THAT'S ME!

EXTRA! PLANET REPORTER MISSING HEIR!

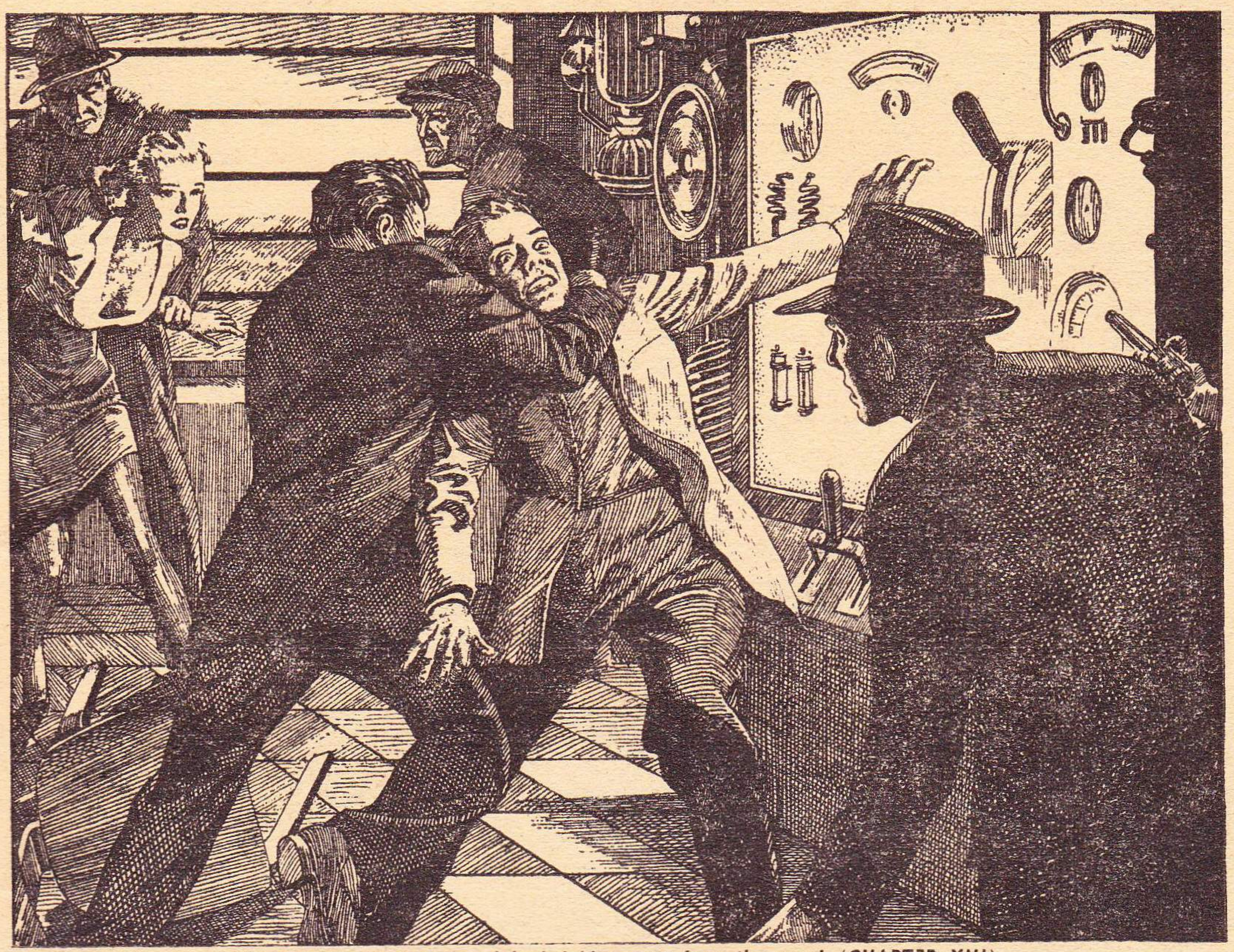
THIS ALL SEEMS LIKE A WONDERFUL DREAM, MISS MORRIS

GWEN TO YOU • • • AFTER ALL, WE'RE FOSTER-COUSINS

HE'S SO HANDSOME

EXTRA! THIN GILLETTE SHAVE SCORES AGAIN!

THIN GILLETTES ALWAYS GIVE YOU SMOOTH, REFRESHING SHAVES THAT MAKE YOU LOOK IN THE PINK AND FEEL THAT WAY, TOO. THEY'RE THE KEENEST, LONGEST-LASTING BLADES IN THE LOW-PRICE FIELD. THIN GILLETTES FIT YOUR GILLETTE RAZOR TO A "T" • • • PROTECT YOU FROM THE SCRAPE AND IRRITATION OF MISFIT BLADES. ASK FOR THIN GILLETTES



Kingallis caught Carroll and hurled him away from the panel (CHAPTER XIII)

The Kingdom of the Blind

By GEORGE O. SMITH

Psychologists said that James Forrest Carroll had lost his mind—but they were forced to admit that he alone could save the Solar System from fearsome outer menace!

CHAPTER I

Amnesiac!

DOCTOR POLLARD, psychologist, seemed puzzled.

"This has happened before," he remarked.

"Too often," said the director of the laboratory.

Doctor Pollard nodded in silent agreement. He faced the well-dressed man seated asprawl in the chair before him and asked, "You have never heard of James Forrest Carroll?"

"No," said the other man.

"But you are James Forrest Carroll."

"No."

The laboratory director shrugged. "This

is no place for me," he said. "If I can do anything—?"

"You can do nothing, Majors. As with the others this case is almost complete amnesia. Memory completely shot. Even the trained-in mode of speech is limited to guttural monosyllables and grunts."

John Majors shook his head, partly in pity and partly in sheer withdrawal at such a calamity.

"He was a brilliant man."

"If he follows the usual pattern, he'll never be brilliant again," Doctor Pollard continued. "From I.Q. one hundred and eighty down to about seventy. That's tough to take—for his friends and associates, that is. He'll be alone in the world until we can bring his knowledge up to the low I.Q. he owns now. He'll have to make new friends for his old ones will find him dull and he'll not understand them. His family—"

"No family."

"None? A healthy specimen like Carroll at thirty-three years? No wife, chick nor child? No relations at all."

"Uncles and cousins only," sighed John Majors.

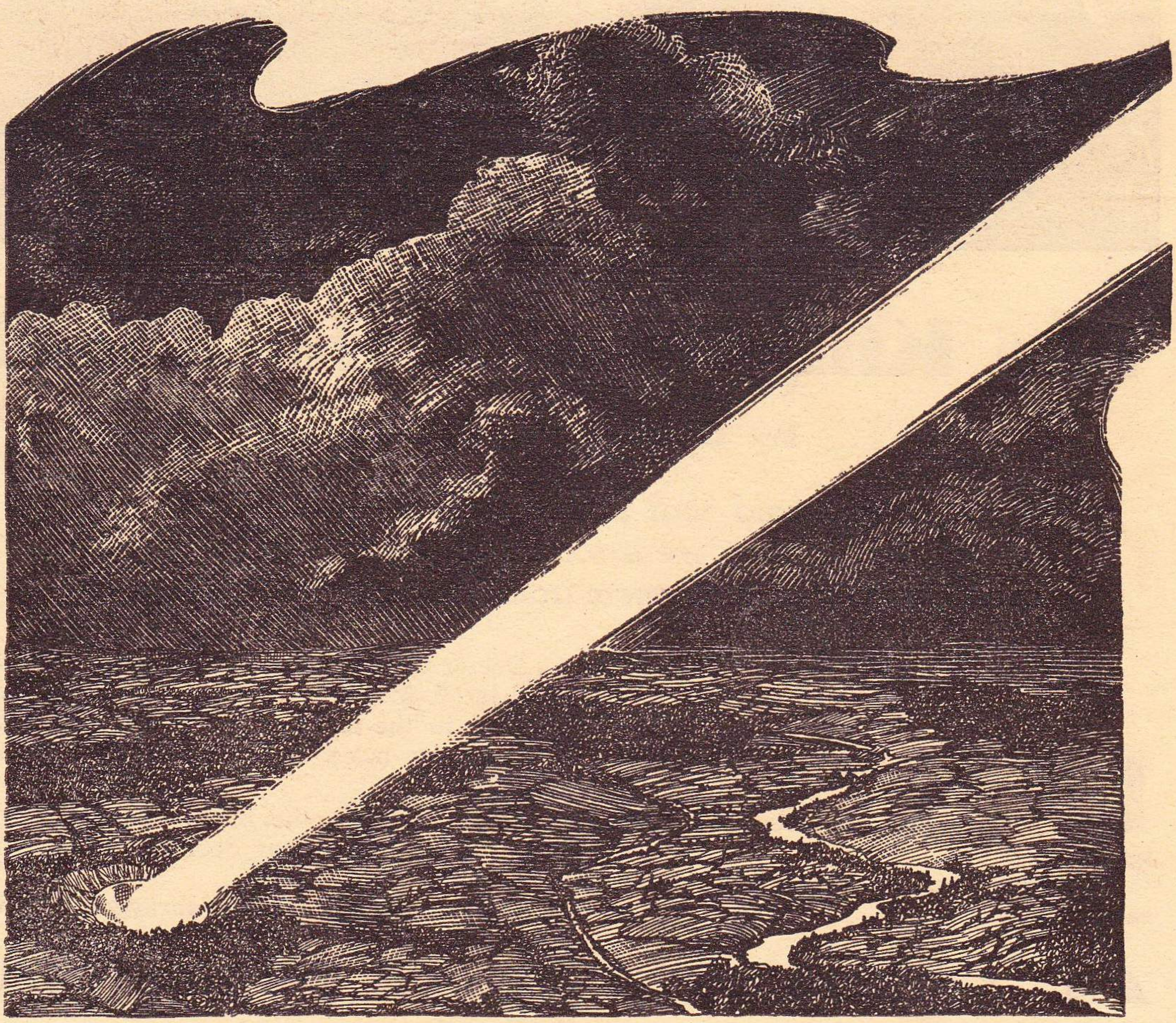
The psychologist shook his head. "Women friends?"

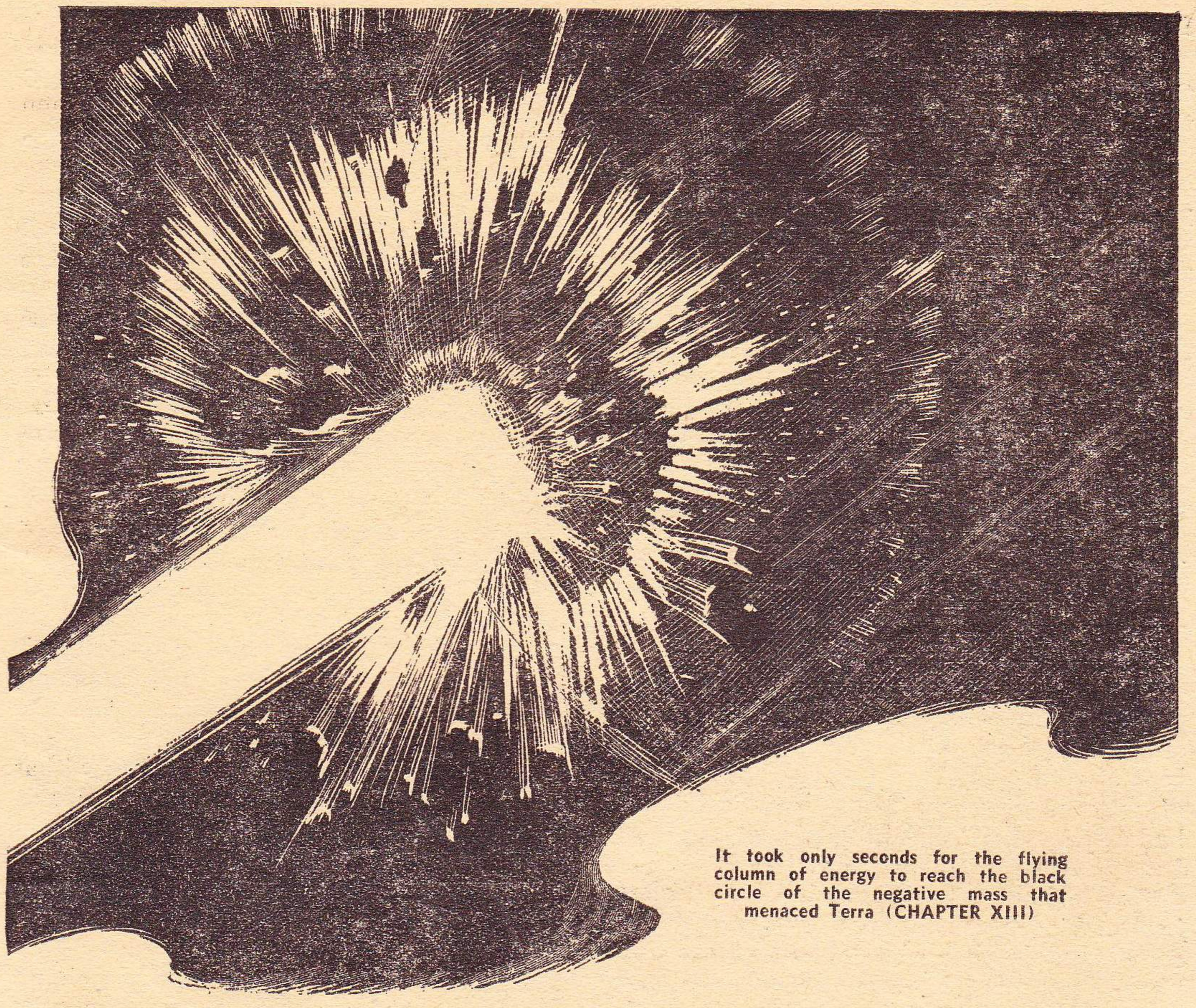
"Several but few close enough."

"Could that be it?" mused the psychologist. Then he answered his own question by stating that the other cases were not devoid of spouse or close relation.

"I am about to abandon the study of the Lawson Radiation," said Majors seriously. "It's taken four of my top technicians in the last five years. This—affliction seems to follow a set course. It doesn't happen to people who have other jobs that I know of. Only those who are near the top in the Lawson Laboratory."

"It might be sheer frustration," offered Dr. Pollard. "I understand that the Lawson





It took only seconds for the flying column of energy to reach the black circle of the negative mass that menaced Terra (CHAPTER XIII)

Radiation is about as well understood now as it was when discovered some thirty years ago."

"Just about," smiled Majors wearily. "However, you know as well as I that people going to work at the Lawson Laboratory are thoroughly checked to ascertain and certify that frustration will not drive them insane.

"Research is a study in frustration anyway, and most scientists are frustrated by the ever-present inability of getting something without having to give something else up for it."

"Perhaps I should check them every six months instead of every year," suggested the psychologist.

"Good idea if it can be done without arousing their fears."

"I see what you mean."

Majors took his hat from the rack and left the doctor's office. Pollard addressed the man in the chair again.

"You are James Forrest Carroll."

"No."

"I have proof."

"No."

"Remove your shirt."

"No."

This was getting nowhere. There had to be a question that could not be answered with a grunted monosyllable.

"Will you remove your shirt or shall I have it done by force?"

"Neither!"

That was better—technically.

"Why do you deny my right to prove your identity?"

This drew no answer at all.

"You deny my right because you know that you have your name, blood type, birthdate and scientific roster number tattooed on your chest below your armpit."

"No."

"But you have—and I know it because I've seen it."

"No."

"You cannot deny your other identification. The eye-retina pattern, the Bertillion, the fingerprints, the scalp-pattern?"

"No."

"I thought not," said the doctor triumphantly. "Now understand, Carroll. I am trying to help you. You are a brilliant man—"

"No." This was not modesty cropping up, but the same repeating of the basic negative reply.

"You are and have been. You will be once again after you stop fighting me and try to help. Why do you wish to fight me?"

CARROLL stirred uneasily in his chair. "Pain," he said with a tremble of fear in his voice.

"Where is this pain?" asked the doctor gently.

"All over."

The doctor considered that. The same pattern again—a psychotic denial of identity and a fear of pain at the dimly-grasped concept of return. Pollard turned to the sheets of notes on his desk. James Forrest Carroll had been a brilliant theorist and excellent from the practical standpoint too.

Thirty-three years old and in perfect health, his enjoyment of life was basically sound and he was about as stable as any physicist in the long list of scientific and technical men known to the Solar System's scientists.

Yesterday he had been brilliant—working on a problem that had stumped the technicians for thirty years. Today he was not quite bright, denying his brilliance with a vicious refusal to help. He remembered nothing of his work, obviously.

"You know what the Lawson Radiation is?"

"No," came the instant reply but a slight twinge of pain-syndrome crossed his face.

"You do not want to remember because you think you will have to go back to the Lawson Lab?"

"I—don't know it—" faltered James Forrest Carroll. It was obviously a lie.

"If I promise that you will never be asked about it?"

"No," said Carroll uneasily. Then with the first burst of real intelligence he had shown since his stumbling body had been picked up by the Terran Police, Carroll added, "You cannot stop me from thinking about it."

"Then you do know it?"

Carroll relapsed instantly. "No," he said sullenly.

Dr. Pollard nodded. "Tomorrow?" he pleaded.

"Why?"

Pollard knew that the wish to aid Carroll would fall on deaf ears. Carroll did not care to be helped. There were other ways.

"Because I must do my job or I shall be released," said Pollard. "You must permit me to try, at least. Will you?"

"I—yes."

"Good. No one will know that I am not trying hard. But we'll make it look good?"

"Yes."

"Do you know where your home is?" asked Pollard with his mental fingers crossed.

"No."

Pollard sighed.

"Then you stay here. Miss Farragut will show you a quiet room where you can sleep. Tomorrow we'll find your home from the files. Then you can go home."

Pollard got out of there. He knew that Carroll would not leave—could not leave. He prescribed a husky sedative to be put in Carroll's last drink of water for the night and went home himself, his mind humming with speculation.

THE conference was composed of Pollard, Majors, and most of the other key men in the Lawson Laboratory. Pollard spoke first.

"James Carroll is a victim of a rather deep-seated amnesia," he said. "Amnesia is, of course, a mechanism of the mind set up to avoid some bitter reality. In Carroll's case, not only is the amnesia passive—some warning agency in Carroll's amnesiac mind warns him that regaining his true identity will result in great pain.

"It is something concerned with his work. We'd like to know what about the study of the Lawson Radiation could produce such a painful reality."

"We all get a bit fed up at times," remarked Tom Jackwell. "It's heartbreaking to sit daily and try things that never do anything."

"We are like an aborigine, born on an isolated island three hundred yards in diameter who has just discovered that certain blackish rocks tend to attract one another and point north. Amusing for a time, but what is it good for and what ungodly

mechanism causes it?" said Majors with a shrug.

"Just what is the latest theory on the Lawson Radiation?" asked Pollard.

"You guess," said John Majors ruefully. "We've had too many theories already. The Lawson Radiation is a strange creation out of Boötes by Arcturus, and borne like Zephyr on the wind.

"Certain elemental minerals, when in contact with other minerals, produce a pulsing radiofrequency current which can be detected after more amplification than the human mind can contemplate sensibly.

"The frequency output depends upon the type of minerals used, and it is completely random so far as any consistent pattern goes. Some elemental minerals are no good, some are excellent."

"You've made determinant charts?"

"Naturally. But there's no determinant. After I said elemental minerals, I should have said that this was the original premise. Now we have a detector working with helium gas surrounding a block of lead bromide.

"Lead and helium are no good, helium and bromine equally poor. Lead and bromide are no good—as long as it lasts. Now don't ask me if the combination of the elements interferes. One good detector operates so wonderfully all the time, that a bit of yellow phosphorus is forming phosphorus pentoxid because it is suspended in an atmosphere of pure oxygen."

"No apparent determining factors, hey?"

"None. You might as well pick out the elements with six-letter names. The periodic chart looks like the scatter-pattern of an open-choke shotgun. Water works fine when it is contained in a glass vessel, but in anything else we know of—no dice."

"You seem to have covered a multitude of things," said Dr. Pollard approvingly.

"We've had a corps of brilliant, imaginative technicians working on the theory and practise for thirty years. Every one of them has come up with a number of elemental detecting combinations. We're now working on four and five element permutations.

"With and without plain and complex electrostatic and magnetic fields—and mixtures of both. We've gone logically as far as we can under a system that demands that we try everything. In each set of permutations, we cover all. You know our motto."

Majors finished with a slight laugh. He pointed to the end of the conference room, where, lettered on the wall above the blackboard was—

LEAVE NO TURN UNSTONED!

"Where does it come from?" asked Pollard innocently.

"Take a fifteen-degree angle from the middle of Bootes. Maybe Arcturus for all we know. Somewhere within fifteen degrees of an arbitrary point up there. A total conic solid angle of thirty degrees will encompass all but wisps of the stuff that filter through once in a year or so."

"And the velocity of propagation?"

"That's the simplest thing to check. The pulses from the Lawson Radiation follow random patterns. A segment printed along a time-scale can be matched to another segment of the same radiation taken from the other side of the solar system.

"It's never perfect enough to do more than approximate the answer, but we've got to get a lot more dispersion than the breadth of the orbit of the planet Pluto before we can detect any time-delay—and if we go too far the synchronization of our test equipment gets more and more difficult. You guess."

Pollard thought for a moment. "I can't hope to know all the angles," he said. "This is sufficient until I have to know more about it. Now tell me what might drive a man into instability?"

"You tell us," laughed Majors shortly. His laugh was not genuine for he felt the loss of Carroll deeply.

"Is there any insoluble dilemma in this at all?"

"Not that we know of."

Pollard nodded. "People are always confronted with insoluble dilemmas of one sort or another, but most of them could be avoided entirely by a slight change in personal attitude. The man who cannot get a job because of inexperience, and can get no experience for lack of job is in an insoluable dilemma.

"But it is usually resolved before the subject gets too deeply involved with his whirly. Someone always turns up needing some sort of help at any cost, and that gives the required experience which can be magnified by the applicant.

"Is it safe to assume that all of these four people who have turned up with the same affliction might have turned up with some

terrific answer that drove them into a tizzy?" asked Pollard.

"Who knows?" grumbled Majors irritably. "Might be."

"What sort of answer would drive a man insane?" asked Jackwell. "If a man is seeking an answer to a specific question, and he has no penalty for not answering, what then?"

MAJORS wrinkled his forehead. "If the answer meant danger—of any sort?"

"No," said Pollard positively. "If it were social danger he would call for aid and tell the authorities. If it were personal danger, he'd run, and use his mind to avoid it."

"And if it could not be averted?"

Pollard still shook his head. "Men of Carroll's stability do not go insane when faced with personal danger or even certain death. How about his notes?"

"Nothing in them that seems out of line," said Majors. "Just the same 'no effect' or 'no improvement' conclusions."

"See here," said Pollard. "Do you have to use these improved detectors on the natural radiation?"

"Of course," said Majors. "We don't know what the Lawson Radiation is, and therefore we have no way of simulating it in our lab. What has us stumped is that the detectors go on detecting Lawson Effects while they're sitting on a fission-pile with no increase in noise-level or signal." Majors smiled unhappily.

"That is, they do until the nuclear bombardment transmutes one of the detector-elements into another one that is ineffective. So far nothing we can pour into any of them will result in an indication."

Dr. Pollard shook his head. "This has been of some help," he said. "But the big job of gaining his confidence and bringing him back is still ahead of me. I think this will be all for now. May I count on your cooperation again?"

"Any time," said Majors. "We need Carroll—which is quite aside from the fact that we all like him and it hurts to see him as he is now."

The conference broke up, and Dr. Pollard left the Lawson Laboratory and headed slowly toward the hospital where James Carroll was still sleeping.

He was praying for a miracle. A mere human, he felt ignorant, helpless, blind against the sheer disinterest that emanated from Carroll's blacked-out intelligence. Not so much for the problem of the Lawson Radiation would Pollard like to bring James Carroll back to himself as for the benefit of the man—and mankind—for Carroll had been a definite asset.

And then Pollard stopped thinking on the subject, for he found himself rolling around in a tight circle in the problem. Did he want Carroll or did he want to find out what Carroll had learned that drove him crazy?

To bring him back to full usefulness—that was admitting that his interest was as much for the benefit of science as for the man. Science in Carroll's case meant years and years of intense study of that one particular field.

He was rationalizing, he knew, and he went further by admitting that bringing Carroll back to full intelligence again meant that, unless the man regained his ability to remember and work on the Lawson Radiation, his return was incomplete. Would he bring Carroll back—only to have the man return to this rare state of amnesia at the first touch of something—and who knew what?

Pollard closed his mind and returned to the hospital.

But the days passed with no hope. Carroll was forced to admit his identity and that was all. His mind meticulously avoided any contact with the Lawson Radiation. In fact, any minor gains Pollard made were lost instantly when any phase of Carroll's former studies was mentioned.

Eventually James Carroll went home. Pollard could keep him there no longer. The former physicist returned daily, and Pollard helped the man to make plans for the future. That hurt deeply, for Pollard had to sit there, helpless to do anything about the man's lack of intellect.

Things that a normal man would take for granted in his daily life Pollard had to outline in detail as planning. Luckily Carroll had financial independence—or unluckily, perhaps, for maybe a job of some sort might have been good therapy.

The trouble was that Pollard could not make his own mental adjustment to see the former, very brilliant James Forrest Carroll working for a pittance by digging ditches or slogging away his life in a menial job.

As the days grew into weeks the pattern of Carroll's new life became fixed in the man's mind and he found it unnecessary to return

daily to the hospital for advice.

And Dr. Pollard gave up, himself a fine case of frustration.

CHAPTER II

Double Trouble

JAMES FORREST CARROLL was lazily happy with himself. His needs were quite simple and the apartment he lived in was far beyond them. He had a gnawing doubt that he could keep it forever, because there was something about money that did not jibe.

He could not make enough money to maintain it—and he did not need it anyway. But it was very nice and he viewed it as any normal man might view living in his own ideal home, complete with everything that he ever hoped to have.

He awoke in the morning by physical habit, dressed by instinct and his breakfast was served by the housekeeper. Then he left the place and roamed. He saw the parks and enjoyed with primitive pleasure the greenery and the natural settings of tree, grass and sky. The park squirrels knew no fear of him and he found them interesting. Perhaps he subconsciously envied their obvious adjustment to their environment.

He visited an art institute once but never returned because it made him uneasy. The same was true of the museum of natural history, though it was more to his liking than the artificial art.

On the same street was a museum of science which, because of a strange arrangement of windows, portico, and row of columns, took on a distorted picture of a grinning giant that threatened to swallow whoever entered. Carroll, without knowing the subconscious connection, feared and avoided it even though he had to cross the street to pass it.

They took him from a planetarium once—screaming in fear and crying to be set free. Claustrophobia, one "expert" said, but he didn't know that Carroll had been mentally sitting in deep space with no solidity beneath him when he started to scream.

He—got along.

There was no apparent advance. His actions in life were normal to his pre-amnesiac self on minor items. He preferred the better restaurants, took an instinctive liking to the same good clothing that he had lived with before. In all outward respects James Forrest Carroll was a well-to-do man without the mental right to carry that position.

Occasionally it bothered him that something was wrong but he avoided the reason for it.

Why am I? he asked himself again and again. *What has happened?* His evenings were spent in roaming, just walking the quiet streets and trying to think of why he was puzzled. On these walks he noticed little of his fellow men and their actions. If they wanted to be as they were, James Carroll was not to bother them.

He often pondered the question of how he would react if one of them called upon him or spoke to him. Then, he thought, he would act. But he was not to criticize nor object to the way in which his fellow man conducted himself so long as it did not bother James Forrest Carroll.

This wonder of what he would do took ups and downs. There were times when he wished someone would act toward him so that he could find out about himself. At other times he did not care. At still other times he knew that how he would act depended entirely upon the circumstances. In the final analysis, however, Carroll's first act toward anyone came from sheer instinct rather than from any plan.

A girl emerged from a building carrying a file-box of papers. It was dusk and she was hurrying along the street before him by fifty feet. It was obvious that her last job for the day was the delivery of this box of papers to some other building and, once it was delivered, she was finished. That Carroll understood.

She stopped for traffic at the end of the block and as she stood there, a large car drove up to the curb and stopped beside her. Idly she turned and walked to the car slowly, opened the door and started to enter.

That struck a hidden chord in Carroll's mind.

"Hey!" he exploded, running forward to the car. His voice startled her and she partly turned. A hand emerged from within the car and grabbed the box of papers. Carroll arrived at that instant and grabbed for the other end. There was a quick struggle and the box opened and a hundred sheets of

notes were strewn on the sidewalk.

THE girl stooped and scooped the papers up roughly, shoving them back in the box helter-skelter and clapping the top back on. Carroll did not see this, for the occupant of the back seat was coming out angrily at this instant.

Carroll reached forward and clipped the stranger on the nose, driving him back into the car. The driver's companion snapped his door open, grabbed the box, hurled the girl asprawl on the floor of the back seat. The car leaped away, leaving Carroll standing there in wonder.

That girl—he should know her. Those papers were important to someone. He stooped and picked one last one up and stared at it. It made no sense.

He took it home. It pained him to read it but someone was in bad trouble because of it, and Carroll did not like the idea of a woman being in trouble over a sheet of paper —or a hundred sheets of paper. It made no sense, and he gave up, tired.

But he returned to the same corner at dusk the following evening. And the same girl emerged from the same building with the same box and hurried along the same walk. The same car came up and she entered it this time, and it drove slowly off in the direction she wanted to go.

Carroll's instinctive shout died in his throat. The car turned off about one square further and disappeared. Carroll stood idly on the corner, wondering what to do next. For fifteen minutes he stood there, thinking. Then the car returned, turned the corner, and stopped. The girl emerged and walked up the street for a thousand yards and turned into a building with her box of papers.

Carroll waited in front of the building for her. As she came out she saw him and her face lighted up with mingled pleasure and puzzlement.

"Hello, Mr. Carroll," she said brightly.

"Are you all right?" he asked her.

"Fine," she said. "And you?"

"I was concerned about you last night," he told her. "What happened?"

"Why—nothing happened to me." Her eyes widened in wonder and in them he saw some unknown uneasiness. He smiled at her paternally.

"Do this every night?" he asked.

"Uh-huh. You know that I have for years."

Her name was Sally. And Carroll wondered how he should come to know her name. But—she knew his. Or at least she knew what everybody claimed was his name, and what was tattooed on his body.

He wondered again, and in wondering, let the opportunity for further conversation pass. The girl was impatient and said, "You must come back to us someday."

"That I will," he said—but it was to her retreating back. Sally was hurrying up the street again.

Strange, he thought. Does she ride in that car every night? And if he—or they—were friends, why was there a bit of fight last evening? Why was Sally surprised at his question about last evening? She seemed to ignore the fact that she had been roughly hurled into the black car and that he had tried to help her. She shouldn't be riding in strange cars all over the city when important papers were in her possession.

He watched her every evening for a week after that, just to see. And every night the same performance was played. It bothered Carroll, and he determined to see what was going on.

The next evening he was in front of her building as she came out. Her face again lighted up.

"Hello, Mr. Carroll," she said brightly. "Can't stay away?"

"No," he smiled, wondering *away from what?* "Mind if I walk along?"

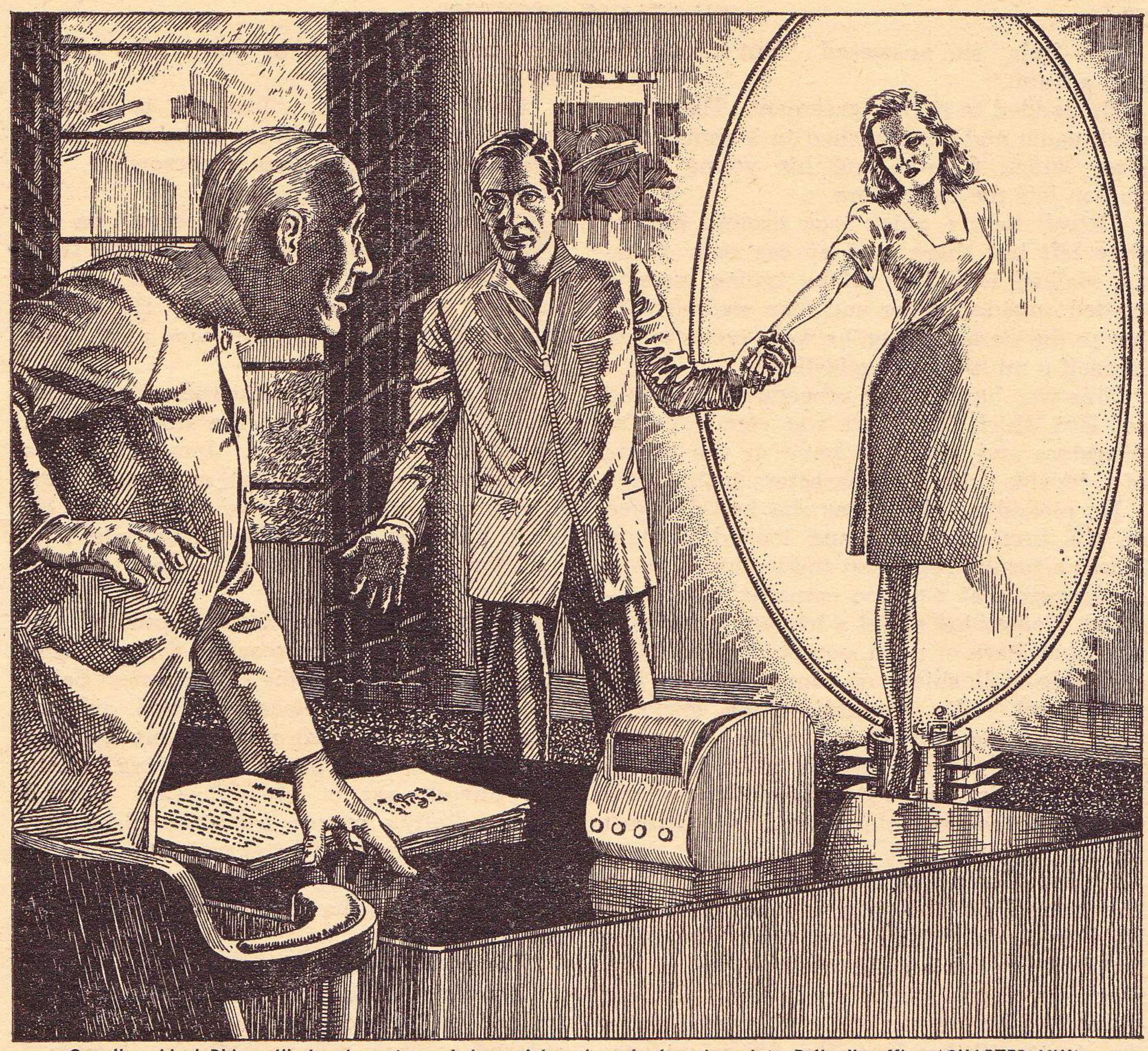
"Not at all," she said. There was no uneasiness in her now. Carroll was safe enough, an amnesia victim according to Dr. Pollard, who had told her to cultivate his friendship if she could. Sally and Dr. Pollard had been in a three hour conference on the day after Carroll had met her outside of the typing bureau. So Sally was prepared.

"Mind?" he said, reaching for the box.

"I shouldn't let you," she said seriously. "I'm charged with their delivery, you know. But—I guess you may, Mr. Carroll. I know it makes a man feel foolish to walk along with a woman carrying a big bundle. Go ahead."

HE TOOK it. Now they'd have to deal with him!

They came to the corner, stopped for traffic and Carroll looked about him nervously. He was expecting trouble of some sort, but no trouble came. The lights changed with absolutely no sign of that black sedan



Carroll grabbed Rhinegallis by the wrist and dragged her through the mirror into Pollard's office (CHAPTER VIII)

and, as they were in mid-street, Sally said, "Mind if we stop off at the drug store for a sandwich?"

"Is that all right?" he countered.

"Yes," she said. "I live a long ride from here and the typing bureau is on the way to the station. I asked Mr. Majors if this was okay, and he said it was. I've been doing this every night, now, for months."

"But the—" he stubbed his toe on the far curb and stumbled.

She laughed. "I'm sorry," she said, "but the picture of the great James Carroll stumbling over a curb—"

"What's so peculiar about me falling over a curb?" he demanded.

Sally blushed. Her remark had been instinctive. To her youth, barely out of adolescence, a brilliant physicist of thirty-five years should not be heir to the mundane misfortunes of the ordinary mortal. But she knew that she should not call attention to his past at all.

"Nothing," she chuckled. "Excepting the sight of a man trying to keep his balance and hang on to a box at the same time. Just struck my funnybone. I was not laughing at you; I was laughing more at the situation. Please—"

He nodded absently. They entered the drug store and sat down. She ordered and he repeated it.

"Doesn't this spoil your dinner?" he asked.

"Nope. It's a long ride home and by the time I get there I'm hungry all over again."

"I suppose this snack is a sort of habit," he remarked idly.

"Uh-huh," she answered. "But it isn't too bad a habit."

He nodded in silent agreement. The sandwich came and was finished in a short time, after which Carroll and his young companion left the drug store.

Carroll took a quick look around him as they left but there was no car near them. He walked with her to the typing bureau, waited outside for her and then walked with her to the station. Then he went home to ask himself a multitude of questions.

This was her regular procedure. She said so. But which procedure was regular? Her drugstore and sandwich habit or the taking of a joyride with the characters in the car?

He picked up the paper she had dropped on the first encounter and looked it over. It was a formal report on the testing of some equipment that was too complex to understand. Something about a trimetal contact in an atmosphere of neon, completely sealed in a double-wall shield of copper with a low noise-level radio amplifier stage enclosed with the samples of metal in gas.

It became vaguely familiar after about an hour of study but it was painfully difficult for him to concentrate on such an abstract idea.

He considered again. Perhaps his presence had scared off the men in the black car. He'd do it differently next time. Again he watched her for a solid week—watched her reach the corner, turn, enter the black car —watched her return and continue on down the street with her box after fifteen minutes of being completely gone.

Then for the second week he watched from the drugstore.

And he emerged more puzzled than ever. For Sally joined him daily and talked with him as she had learned to do.

Then, to top his confusion, he watched the girl enter the car and drive off one day, after which he entered the store across the corner, to see Sally sitting there waiting for her sandwich and obviously expecting him.

"You're late," she said with a smile.

"I'm confused," he said dully.

"Did you ever see a big black sedan?" he asked her.

"Lots of them," she said. "Why?"

"Any one that you especially noted?"

"No. Most of them are filled with people going somewhere in a hurry," she returned with a laugh. "I often wish I had a car—or a friend with a car. I haven't got any—at least none that work in this region of the city."

"Uh," he grunted. "I've got to hurry," he said with what he knew to be unpardonable shortness. "See you tomorrow?"

SHE nodded, and Carroll went out on the street in time to see her emerge from the black car and finish her delivery of the package to the typing bureau. He looked back into the store, but she was gone. Nor had she passed him.

That was enough for Carroll. He sought Dr. Pollard and told him the story. Pollard looked up with pleasure. James Carroll's acceptance of such a problem and the attempt to figure it out was an excellent sign. He could give no answer, of course until . . .

"Then come along," said Carroll. "We've time."

They went silently. Carroll pointed out the black car as it approached the curb and then took Pollard into the store to meet Sally. She greeted them pleasantly and did not demur when they left precipitately because she knew that Dr. Pollard was trying to help Mr. Carroll out of his difficulty. Carroll showed Sally's return from the black car, and the subsequent delivery of the box of papers to the typing bureau.

"Carroll," said the psychologist sadly, "forget it!"

"Forget it?" demanded Carroll.

"I saw no black car. You claim that Sally walked to the corner, turned away and entered a black sedan. Actually—though I said nothing—Sally crossed the street and entered the store. As we finished there and left she followed us, passed us on the sidewalk and delivered her package. This is merely a delusion, James."

"Delusion?" said Carroll doubtfully. "Am I— Am I. . .?

"I plead with you, James. Let me give you psychiatric help? Please?"

Carroll considered. Delusion—he must be going mad. "I'll be in to see you tomorrow," he said.

Pollard took a deep breath.

"Thank God!" he said.

James Carroll returned home in a dither. Regardless of the pain of—whatever it was —he was going to go through with this. Delusions and hallucinations of that vividness should not be. He must be in a severe mental state. He hadn't believed them when they told him that he had been a brilliant

physicist. But this well-proven hallucination was final. And before he got worse . . .

James Carroll was in a state over his state by the time he opened his front door. He entered the room, looking idly about him, half in fear of what he might see next.

What he saw was the sheet of paper with the report on it.

Could you feel an hallucination? Could you read an hallucination? How could a man with five nominal senses, all run by one brain, reach any decision?

He pressed the button on his wall and the housekeeper entered.

"Mrs. Bagby, I am in a slight mental turmoil. Please trust me to the extent of asking no questions but I beg of you to tell me exactly what I will be doing for the next few minutes?"

"I'll try," she said, knowing from Dr. Pollard all about Mr. Carroll's state of mind. She was willing to help.

"You are sitting at your desk, reading a sheet of paper upon which are some handwritten notes and a sketch. Now you are rising. You have just torn off an inch from the bottom of the page—where there is no writing. You are lighting a match, touching it to the end of the paper. It burns.

"You are walking toward the fireplace—moving swiftly now because the paper is burning rapidly. You drop it on the hearth—and the already-laid fire is catching. The chimney is smoking a bit and you are poking the fresh blaze."

He turned and faced her.

"Thanks," he said. "That's what I thought I was doing. Now, to avoid a mental discussion of personal metaphysics, I must establish the validity of this sheet of paper!"

The housekeeper asked if there were anything more to do, and Carroll shook his head idly. She left, and James Carroll faced himself in the mirror.

"Whose hallucination?" he asked himself. "Mine—or Pollard's?"

He recalled a tale of a man so convinced of his hallucination of utter smallness that he prepared trick pictures of himself, completely overwhelmed in size by the common water-hydra and its associated animalcules. Could he have prepared this report to support his own belief?

He smiled. Tomorrow he would know for certain! If his sheet were valid, it would be missing from the files. If anybody had interfered with the official channels of the reports it had been someone other than James Forrest Carroll. Perhaps Dr. Pollard could identify the report.

Then he'd know who was hallucinating!

CHAPTER III

Kidnaped!

DR. POLLARD finished telling his story to John Majors and said, "The whole thing jells, John. Everything fits perfectly."

"I don't see it," objected Majors. "How can a man driven into a psychosis by overwork turn up concocting such a wild-eyed yarn as this hallucination?"

"Easily. Supposing that Carroll had come upon something basically unsound. Suppose all the rest had done the same, the other three or four. The tinkering with the notes is a normal justification for him—if someone hadn't been tinkering with the notes, the problem might have been solved long ago.

"Mrs. Bagby called me just before you came in, remember. I've taken time to inspect all the compiled notes prepared by the typing bureau from a couple of days before Carroll's illness to the present date. They're all present. I've also inspected the originals. There are none missing. Carroll's note must be a psychotic attempt to prove his sanity."

"How could he prepare such?" wondered Majors.

"Easily. It was done under a psychic block and the patient remembers only the true—*his* true—facts of how he found it on the street."

"Then you believe that Carroll was not on that corner on the day he first saw Sally get hauled into that black sedan?"

"He may not have been there at all. We all knew Sally's habits and that corner very well. That Carroll returned on the following days is a part of his justification pattern. The whole thing is very logical. And it is too bad. I was hoping that Carroll's interest in Sally was a glimmer of returning interest in life and work."

"The child is half his age," snorted Majors in derision.

"All right. So she's about seventeen. I don't expect any real attraction to develop—I'd feel much the same way about them if Sally happened to have been Tommy, the

co-op student. All I want is for Carroll to have an interest in something or somebody. I'd gladly offer my wife up as an item for his interest because I know that no fixations would come of it."

Majors scowled. "I couldn't say the same," he observed.

"That's because you do not know Carroll's underlying personality. I do."

"But you admit he's not the same man."

"He isn't—but his sense of loyalty is not changed. So long as he's that way there's hope for him."

"But what do you intend to do about him?"

Dr. Pollard laughed. "Me? I'm going to admit that maybe he has something there, but that this thing is problematical. Oh-oh. He's here," said Pollard, pointing to a winking pilot light above the door. An instant later his nurse entered and was told to send Mr. Carroll in.

"Can you prove the identity of anything?" demanded Carroll once the opening greetings and informalities were finished.

"It depends," said Pollard cautiously.

"Well, I have a sheet of paper here that came from that first day when I saw Sally confronted by the black sedan. Is this valid or is it false?"

"Since I can show you the original of that report, it must be false," replied Pollard. "You see, Jim, regardless of whether you admit it or not, you've been so close to the Lawson Radiation that you could easily fake up what might be a quiet valid report if you hoped to show some proof."

"But, good heavens, would I fake a report that I know will be matched by the original?"

"In your right mind, no. I don't know how much this last couple of weeks of problem did to sharpen you up, Carroll. But remember that you were hitting an I.Q. of about seventy after your—accident. A seventy I.Q. might be that dense and can be that dense.

"And, of course, the subconscious mind, hoping to salve your conscious mind, might do it. Now that you know it is false, perhaps your subconscious mind will bring forth something of a more convincing nature."

"If what I think is true," said Carroll slowly, "the same men who intercept Sally every day are quite capable of producing as good a counterfeit as I am!"

"I claim that there are no men in a black sedan."

"Oh?"

"Tell me, Carroll, how do you rationalize the fact of two Sallys?"

"I think there is something to all this that is far deeper than our five senses will admit," said Carroll flatly. "Some agency is doing all it can to prevent us from finding out about the Lawson Radiation!"

Pollard scribbled "persecution complex, too," on his scratchpad in a brand of his own unreadable shorthand. Then he said, "You're convinced to the contrary?"

"I am."

"Tell you what I'll do," said Pollard. "Since you think this affair is what you claim, I'm going to give you a chance to prove it. I'm going to advance Sally into the mailing department and let you take over the job of delivering those reports yourself. You feel that they might not be able to pull the wool over your eyes?"

"You know what I think?" said Carroll sharply. "I think that the days that I joined Sally for her sandwich I took a ride with her in that car, instead!"

"How do you come to that conclusion?" asked the psychologist, scribbling on his scratchpad.

"Because every day that I watched I saw her enter the car. Every day I was with her we saw no car. Could it be mass-hypnosis?"

"It might—but why weren't you hypnotized?"

"I don't know. Why have I got this amnesia?"

"It isn't amnesia anymore," said the psychologist ruefully. "It is now a definite psychic block against your former line of work, coupled with self-justified hallucination."

"I hate to puncture that bubble," said Pollard. "But I must. Take that job and find out for yourself!"

"I will," said James Carroll flatly. "You watch!"

"Good!"

"And I will not be stopping for sandwiches, either!" snapped Carroll. "Or, I might add, anything else!"

JAMES CARROLL tucked the box underneath his arm and set out along the street. He walked warily, keeping a sharp lookout for the black sedan. A few hundred feet ahead of him he saw Sally turn into the drug store for her habitual snack but he suppressed very quickly the impulse to follow her and talk to her about the job.

He stood on the corner of the square, waiting for traffic. It was a reasonably long-time light for the crosstown road, and Carroll reached for a cigarette. His pack was empty, so he crumpled it and tossed it in the nearby waste-chute and looked about him questingly.

The corner upon which he stood held a cigar store and James Carroll entered the shop to buy cigarettes. The store was rather full and he was forced to wait.

And it came to him, then. During that wait it came to his feebly-groping mind that this was the same sort of pattern that he had seen before. Was this truth—or reality? He smiled, and as the storekeeper came towards him, he looked the man in the eye and said:

"When did you split me off?"

There was a look of amazement on the proprietor's face—wonder, puzzlement and a scowl of slight anger.

"You heard me," said Carroll flatly. "What are you doing to my reports?"

"You're nuts," said the storekeeper.

"Am I?" replied Carroll lightly. "Then I'll tell you why. The Lawson Radiation comes from a system of interstellar travel, used by some race out in the Bootes region of the sky. The insoluble dilemma is how to go out to learn the secret of interstellar travel when I need interstellar travel to go out and ask the questions—"

The man's face faded, distorted like a cheap oil-clay image under too warm a light.

The store flowed down, too, and swirled around in a grand melee of semiplastic matter. The light inside the store darkened and the only illumination within the rolling, churning store came from a light that swung back and forth madly in front of the door.

Carroll fell backwards into a cushion of soft-plastic floor which bounced slightly under him from time to time. A low roaring mutter came to his ears. The light continued to swing but it was swinging past a window now and only in one direction.

He opened his eyes wide and faced the man in the seat beside him.

"Well?" he asked.

"It isn't, very," growled the man.

The driver turned, swore in a strange tongue and then turned the car back. The driver's companion picked up a small phone and spoke rapidly into it. The car rounded the block, re-passed the corner long enough to pick up a man dressed as Carroll was.

Halfway down the next block the man got out and took the box of reports. Then the car drove away and, as it pulled away, Carroll felt the jab of a needle in his thigh.

CHAPTER IV

Face to Face

SLOWLY, the initial thought that filtered through the velvety, comfortable blackness was that he was James Forrest Carroll. That established, the rest came with a swift flow of fact and acceptance in chronological order that brought him to the present date.

It seemed almost instantaneous, this return to reality. Yet in his drugged state, or rather the state of fighting off the last dregs of the potion, Carroll did not recognize the long interim periods of slumber. Actually it took him six hours to return to a full state of

[*Turn page*]

TOPS FOR QUALITY

BIGGER AND BETTER

wakefulness. He was unaware of the slumber periods and they subtracted from his time-consciousness.

When finally he did come fully awake, it was to look into the faces of the two men who had abducted him.

"Wh—?" he grunted, believing that he uttered a complete sentence asking what the score was.

"You know too much," said the man on the left.

The implication did not filter in at first. It came very slowly that one who knew too much was often prevented from telling it to the right people.

Then he said, "What are you going to do to me?"

"Eliminate you," came the cold answer.

The other man shook his head slowly. "No," he said. "Not at once."

The first one turned abruptly. "Look, Kingallis," he snapped, "This one is a definite threat."

"And there may be others," smiled Kingallis. "We could easily eliminate him. And we will but only after we locate exactly what there is about him that permits him to be a threat to us. There may be others. We must stop them."

Sargenuti nodded in a sardonic manner. "Even in the face of a threat the great Doctor Kingallis must experiment!"

"I'll have none of your sarcasm!" snapped Kingallis. "You are not my equal by four groups. You are my underling and will therefore do my bidding with no quarrel."

"Yes, master," sneered Sargenuti.

Kingallis stepped forward and slapped the other across the face with the back of his hand. Sargenuti stood four inches taller than the doctor and outweighed him by at least thirty pounds. He could have broken Kingallis in half with his bare hands but he accepted the insult across his face without flinching nor attempt to retaliate.

"Because we are isolated here, far from our normal surroundings, you have become slovenly in your attitude," snapped Kingallis. "You are no planner, Sargenuti. Your method is acceptable in some cases but you have not the intellectual equipment to cope with a situation as involved as this is.

"Whether you continue as you are, advance in your work or are dropped a group depends upon the future. Suppose there were several people involved that have his power?"

"There cannot be," returned Sargenuti.

"Fool! If there is one there may be others. Now do as I say without argument!"

Carroll listened to this discussion with interest. From it he learned that there was obviously some plot against the Solar System and that he, Carroll, was possessed of some factor that made his continuance dangerous to their plotting.

He half-smiled and said, "There are many like me."

Kingallis turned back to his captive and shook his head.

"No," he said. "There are not! Sargenuti had no trouble until he ran into James Forrest Carroll. That is why he is bloated with delusions of grandeur. He thinks because he has had no competition that he is supreme.

"He forgets the platitude, 'It is a sharp blade that cuts but cheese!' It is notable, however, that the first time he met James Forrest Carroll he was forced to call for help."

"I was puzzled," admitted Sargenuti.

"A slightly more intelligent moron would have known that this man was capable of avoiding your block," snapped Kingallis. "When he came forward to interfere the first time. That is when you should have caught him. Instead you ignored him for too long. Idiot!"

"All right," grumbled Sargenuti.. "But this is just telling Carroll things he wants to know."

KINGALLIS smiled sourly. "Perhaps it is better that way," he said. "When he sees what he is up against he may be less violent."

"And if he again escapes?"

"He will not escape."

Sargenuti laughed roughly. "It would be drastically amusing to find that James Forrest Carroll is smarter than the great Doctor Kingallis."

"Shut up!" snapped Kingallis angrily.

He turned to Carroll. "You know too much," he said. "Yet I have no qualms about telling you more. It is our job to prevent the spread of knowledge about the Lawson Radiation, to discourage research and to cause the importance of the Radiation to diminish.

"We employ mass hypnotism to intercept the reports, to read them, to make the minor changes that prevent correlation of certain data that would lead to some discovery of

importance. This happens only once in a few months.

"We can tell by the title of the experiment whether it may or may not include a clue. When someone comes upon a real find we erase his mind."

"And I came upon something?"

"You did."

"What was it?"

Kingallis smiled tolerantly. "You wouldn't expect me to tell you?"

Carroll shrugged. "I suppose not," he said. "But just why do you think I am a basic threat to your plans?"

"Obvious. Of all, you are the first that ever came back to full control of his faculties after we erased your mind. The others have pain syndromes every time they consider research at all. You do not.

"Not only that, you were capable of avoiding the block. We used mass hypnosis on the people within a visible radius of that corner. Of them all, you alone can see the black sedan and the resulting interception."

"But when I went with Sally you intercepted me, too."

"Of course. But you were then right in the main focus of the control beam."

Kingallis turned to Sargenuti. "I thank you for not killing him under the beam," he said. "Your unimaginative mind might have done that. It would have erased a danger, true, but would have prevented our study of the danger at first hand."

Then he turned back to Carroll. "We might not have been able to kill you, at that," he said. "I don't know. You seem to have become stronger each time you underwent the control instead of becoming weaker like the average subject of hypnotism."

"But—?"

Kingallis shrugged. "Most interesting," he said reflectively. "Most interesting."

"What is so interesting?" grunted Sargenuti.

"Consider," said Kingallis. "He finally entered direct control alone. He was the focus. You did succeed in controlling him to a certain point but James Forrest Carroll—mentally living in a perfect dream—recognized the fact that this was not true.

"He broke the dream, the power of our beam. His unaided will power, Sargenuti, came up from below a sensory delusion and forced recognition of the truth against the evidence presented by his physical senses."

"So?"

"So," concluded Kingallis, "We shall find out what it is about this man's mind that is powerful enough to overcome the power of our beam. For, Sargenuti, we may encounter others."

IN THE days that followed, one upon the next in a never varying monotony, James Forrest Carroll increased both his store of knowledge and his judgment. It has been said that wide experience is a condition wherein the possessor can fall back upon some personal precedent for any situation that arises.

Carroll, however, could have no such precedent, nor is it likely that any man or all men combined could piece together a reasonable decision based on piecemeal precedent. Therefore Carroll faced the situation with a complete lack of experience.

He realized that making any decision now would be so much tossing of a coin. Lacking the full particulars, the reasons, the understanding of the other race's motives, he could make no plans.

Yet he did know from experience that the best way to lay a cornerstone upon which to build a plan was to wait, to study and then, when the final returns were in, to decide.

Kingallis had confirmed Carroll's suspicion that an Extrasolar agency was doing its utmost to prevent the spread of knowledge about the Lawson Radiation.

Kingallis had not mentioned why.

The facts that Carroll had were sketchy. He knew only what he had already suspected. He had been kidnapped. He knew why. The latter reason was both logical and also a perfect answer to a paranoid question.

He shied away from it, and recognized his own unwillingness to face the fact. That in itself bothered Carroll because he disliked to think himself insane, even though he often questioned his sanity.

Carroll found that none of this was reassuring. There was no equitable yardstick that the mind could apply to itself. It is often said that the insane cannot question their own sanity—that to question your own sanity is a sign of stability.

Yet it may be quite true that a clever paranoid might question his own sanity regularly as a means of proving to himself that he is sane. Carroll played with this mad spiral often and found it a vicious circle.

So in between his sessions of study, James Forrest Carroll tried to delve into his own

mind. He had come to only one conclusion: That so long as Kingallis was studying him, he was able also to study Kingallis.

The problem of why bothered Carroll.

Mankind has never ceased to study anything that might prove dangerous. Almost any discovery made is dangerous in some manner. It is just that mankind has learned to handle its discoveries with care as they became useful. Or else—

He tried broaching the why to Kingallis and was brushed off openly with, "It is of no consequence."

Carroll considered two possible answers. One, of course, was that Kingallis and his people were suppressing all study to prevent the Terrans from learning about interstellar travel for purely personal reasons. You do not give away your military secrets to a people you hope to destroy.

The other reason was the complete opposite—the other race, knowing the dangers of research, were trying to keep Terra from becoming involved until Terra grew up. Handing the secrets of nuclear fission to a race not yet ready for it was one example, though a bad one, for it takes considerable technical excellence to handle it.

A simpler case is plain black gunpowder—sulfur, charcoal and potassium nitrate. Boys in chemistry class have lost their hands and their eyes because they played with that which they did not understand well enough. The nitration of glycerine is not too hard to perform, yet in the hands of an amateur it may take the house skyward before the project is finished.

For, strangely enough, the amateur at any science feels that he must make a large batch in order to do it at all. In electricity he wants excessive powers and lethal voltages to do that which a trained technician can accomplish with less deadly items.

However—was the motive avarice or altruism?

James Forrest Carroll studied them as they studied him.

CHAPTER V

Kingallis

KINGALLIS himself put an end to one of Carroll's worries. After several days of study, the alien doctor called him aside.

"Carroll, you know that you are helpless," he said. "We know that you are helpless. The point is just this: We can study your mind better if you are not worrying. Therefore I am going to put an end to one major worry of yours. Remember, always, we know that you are studying us!

"We are using the forerunner of our mental control beam to study you, Carroll. You know that. The mental educator came first, the mental control without wearing electrodes came long afterwards."

"Understandable," nodded Carroll easily. "Men learned to communicate along a wire long before they used radio."

"The gadget we've been using is none other than a person-to-person telepathy aid. It was first developed as a means of placing men *en rapport* while studying a complex problem. Thus, for instance, a machinist can do a job for an electrical project while understanding perfectly just why this must or must not be done despite its mechanical desirability.

"It was but a step from that to its use in educating the youth of our race. A rather complex problem, Carroll, and one that cannot be appreciated until the whole problem is studied complete with both successes and failures.

"We taught then, Carroll, from a teacher-to-student plan. Later it was discovered how to record certain phases of lessons. The latter removes one main difficulty of the automatic educator."

"Mind telling me what?" asked Carroll, fencing for more information.

"Not at all. You see, the living hookup produces a double flow of information—which is what I meant to tell you. You are studying me as I am studying you—and, as in the case of an infant with erroneous information, you are placing errata in the teacher's mind."

"All children know—from their limited visible evidence—that the earth is flat. Only deep study proves otherwise. I can see where a continued youthful insistence upon a flat earth might cause a bit of mental collision in any teacher's mind." Carroll's voice was sharp.

"You have the point exactly," smiled Kingallis.

"Then tell me," Carroll said suddenly, "why I cannot find out why you are suppressing the information I want?"

"Because we are not studying that," smiled

the alien doctor. "I surprise you? You expected me to wish my answer recalled? No, Carroll, I care not that you know some things about us."

Carroll shrugged. Kingallis was clever. Had Carroll known that worry hampered the study he would have felt relieved even though he tried to worry more. That would have been a minor defeat.

But the fact that Kingallis knew and cared not, removed all concern from Carroll's mind but one, and that one was how to hamper the research alone. It was not a satisfactory question as there was no satisfactory answer.

It was many hours later that both a possible answer and a complete impossibility of its use came to a sleepless man. Carroll arose from his bed and tried the door. It was open. Carroll's enforced residence was a large estate, a good many miles from town, in the center of a hilly country.

Carroll left his room and went down the hallway to the laboratory. He prayed that no one was following him with a mind-reading beam of some sort. He guessed that if these aliens could control an entire community with a mental beam, it would be no trouble to read his mind.

HE FOUND the cabinets that contained the records of knowledge used by the aliens. These were large reels of wire in metal magazines. On the face and back of each case was its title in the—to Carroll—completely unreadable alien characters.

That was a problem in itself. A lot of good it would do to acquire useless knowledge. Carroll wanted scientific facts or perhaps a recording of their plans. A complete course in alien geography, for instance, would be completely useless—the aliens seemed disinclined to take him from earth.

Yet Carroll had no way of knowing what these characters represented. A book might have given a clue—books often contain pictures. There was no telling on a reel of wire.

Carroll wondered whether the reels were stored in some sort of alphabetical order, in some numerical order or according to some semantic plan that gave the initial startings first and permitted the selector to progress. He knew, however, that if he were running such an expedition, he would not include Guffey's First Reader among the collection of texts. His chances of learning the rudiments of the alien tongue were remote.

In selecting a book one scans through the pages. In selecting a reel one must try it.

So, making a guess, James Forrest Carroll selected a container at random and, still amused at the guesswork quality, he carried it to the machine used by Kingallis to study his mind.

He flipped the switches as he had seen Kingallis do it. He inserted the reel magazine in the obvious slot and fiddled with some tiny toggles until the reel started to feed through the machine.

Then quickly, Carroll slipped the head electrodes on and reclined on the soft couch to let the flow of knowledge enter.

In complete oblivion as the machine ran, Carroll had no control over his actions. It ran on and on and the unreeling wire passed its knowledge into Carroll's brain. It concluded finally and Carroll sat up.

It was faintly light outside and by that faint light Carroll looked at his watch and was amazed to find that it was almost six o'clock in the morning. He quickly replaced the reel and turned to go back to his room.

"Pleased with yourself?" asked a quiet voice.

Carroll jumped a foot. Then in the dim light he saw the form of a woman, fully dressed, sitting in an easy chair not far from the door. To add to his complete surprise he hadn't known that women were with this outfit.

"Who are you?" he demanded.

"Plead, do not demand," she said. "For you have not the right to courtesy."

"Madam, I am a prisoner here. Courtesy *per se* has no meaning at all. I have as much right to prowl the place, picking up what I can, as you have to imprison me in the first place."

"A nice point of ethics and quite devoid of rational answer," smiled the woman. In the gaining light James Forrest Carroll saw that she was passably good looking though certainly no raving beauty. When she spoke, her white teeth gleamed in the dim light.

"However," she said, "I am Rhinegallis, King's sister." Then she laughed. "And that," she said, "is the only thing you learned this evening!"

"Oh, I'd not say that," said Carroll.

"Then tell me," she said amusedly, "how you justify yourself."

CARROLL paused. Somehow it seemed normal to him that he should not care

to appear weak or helpless in front of a woman, even an alien woman. Yet the truth of the matter was that Carroll was a complete captive and at the mercy of this bunch.

Whatever he did he did at their sufferance. There was little to be gained by quiet ridicule in explaining that he had taken a recording by sheer blind guesswork because there was no other way.

There was little to be gained but open ridicule to be forced to admit to this woman that he, James Forrest Carroll, reputed to be one of the Solar System's foremost physicists, was in a position seldom if ever occupied by any human being.

He knew and he knew that he knew, but he knew not what he knew!

He laughed helplessly. *"Son lava tin quil norwham enectramic colvay si tin mer vo si—"*

"Very lucid," she replied in English. "So in the course of the evening, James Forrest Carroll has a complete course in our science —in our language-pattern in our manner of thinking. And," she laughed merrily, "of none of which he has the slightest comprehension.

"That was a nice try, Carroll, but availing nothing. I'll tell you this, however—what you have learned this night is of no more use to you than a complete knowledge of archeology so far as an answer to your present problem goes.

"And for your trouble—it is a rather complimentary thing that you'd make such a try, and we'll all commend you—I'll be your guest for breakfast."

"Thank you," said Carroll cryptically. "I hope I'm amusing."

Rhinegallis stood up and faced Carroll. "You are quite a man," she said earnestly. "And though we must—use you—we still admire you."

"One might admire the tenacity and ability of a pet dog who is working its way through a maze toward a hunk of steak," he said quietly. "Yet one does not consider the dog our equal."

Rhinegallis shook her head. "Would it please you to know that you are a threat to us?"

"I've known that," he returned quickly. "And so is a dog a threat to man. Dogs can kill. They do not because they know that they are dependent for life upon becoming man's friend."

"And you?"

He smiled sourly. "Again the question of ethics," he said. "For no matter what I say you know that I shall do anything I find necessary to defeat you."

"We will never accept your word as bond," she told him. "Were it a simple matter of personal integrity and honor we could take it and be satisfied. But there is too much at stake. A man would be a complete fool to give his word and keep it when his future hangs in the balance."

"I'd not give it," he said simply. And then he turned to her with a cryptic smile. "So my future and the future of Sol are really at stake?"

"Yes," she replied.

"Then you are a threat."

Rhinegallis smiled at him. "Is one a threat that does not permit the child to play with fire?" she said coolly.

"May I point out that I am not a child," he said crossly.

"Ros nile ver tan si vol klys," she said in her own tongue. "And if you know what I said you'd know what you studied last night."

"When a child is deprived of matches, he is told why—in many cases he is shown mildly what happens. So go ahead, Rhinegallis, treat me as a child—and tell me, Rhinegallis, why I must not play with the Lawson Radiation."

"It is dangerous," she replied.

"In my lifetime," he said, "I have been responsible for the direction of many children. I have yet to turn away a curious—honestly curious—child. Mankind is always curious—providing we know why."

"It is dangerous," she repeated.

"Dangerous," he echoed. "Dangerous, Rhinegallis, to whom? You?"

"Mr. Carroll," she said quietly, "you think you have trapped me into an admission. You have not. Tell me, do you honestly think you can take the position of demanding an answer?"

"I think so."

"You cannot. You have not."

"No?" he said with a bitter laugh, "then if your race has no evil intent it could stop a lot of trouble, suspicion and labor by guiding us instead of blocking our efforts. Add to that your own refusal to tell me one thing that would frighten me away. I come up with a rather unhappy answer, Rhinegallis."

The girl turned away and left. Her offer to join him for breakfast was forgotten. Carroll watched her back as she went down the hallway and considered himself lucky.

Even considering that their way of life was alien to Terran thinking, no advancing race could ever deny honest curiosity unless it had some ulterior motive. Ergo, they were suppressing the truth about the Lawson Radiation because they were afraid that Terra would find the answer!

From behind him he heard Kingallis chuckling.

"Val tas Winel yep frah?"

Carroll turned angrily. "Sell it to Tin Pan Alley," he snapped. "I've heard worse jangle songs!"

He stamped off angrily to his room.

CHAPTER VI

Proof

ONCE in his room, Carroll gave way to a period of complete slump, both mental and physical. He just sat there and felt—not thought about—the sheer impossibility of a single man successfully fighting an entire inimical culture.

The more he considered it the more he felt the futility of it all. The fact that he of all the teeming billions of Sol's heritage, was cognizant made it that more hopeless.

Then out of that last, single, hopeless fact James Forrest Carroll took a new hope.

For upon himself and himself alone rested the salvation of mankind! Regardless of what the world might think of him, regardless of life itself, he must carry on!

And when he returned to confront Doctor Pollard he must have visible proof!

The day dragged slowly. As usual, Kingallis did his studying, but found it hopeless because of Carroll's deep funk. Kingallis gave up and left Carroll, which was worse for Carroll because he had all those long hours in which to sit and stew.

Evening came, and with it came more hope.

Whatever it was that Carroll learned it was there and stuck tight. Whether valid or useless it was there. It seemed useful but he could not tell.

For instance there was a concept of a circlet of silvery wire. This was mounted on a small cylindrical slug of metal that enclosed a bimorph crystal. The picture concept showed contour surfaces of force or energy that grew progressively fainter as they retreated from the circlet of wire.

Not magnetism—for Carroll could see no energizing current. Not electrostatic field—for there could be no gradient. The word-concept for the thing was *"Selvan thi tan vi son klys vornakal ingra rol vou."*

Well—whenever Carroll knew words he would know what the circlet of wire did—and why.

But as he drew the diagram on a sheet of paper and labeled each part with a Terran symbol-system representing the alien sounds Carroll understood one other thing. No book is complete without an index!

Wire recordings of text books are impractical otherwise. An engineer seeking information on the winding, packing fraction of a certain type of wire would not care to wade through four hours of facts. Of course he should know it already, for the facts would be indelibly impressed upon his mind.

But there was the forgetting-factor that comes from disuse of any fact and doubtless this automatic means of education did not forever endow the owner with an eidetic memory of everything—never to be lost no matter how long the facts lie in disuse. But every text book has an index.

And so Carroll sought the laboratory again that night and selected another roll at random. He placed it in the machine and, as he started it, hurled a thought into the machine.

Not words, but mere concept—the abstract idea of listing hurled into the machine and the wire reel sang swiftly through the machine to slow down at a listing.

Useless, of course—there were things like, *"Walklin—norva Kin. Fol sa ganna mel zin."* Chapter and verse, probably. What Carroll sought was a dictionary.

He tried another reel and found it as mystifying. A third reel came upon a listing that seemed vaguely familiar. Along with the mere words, of course, there were mental pictures.

"Zale," he learned, was a measure of distance equivalent to seventeen thousand times ten to the eighth power times the wavelength of the spectroscopic line of *evaalorg.*

Carroll had hit upon a section of physical identities found in most physics texts.

HE ALSO learned a large number of physical identities of no consequence. The unit of gravity expressed in the alien terms meant nothing to a man used to dynes

and poundals. There was too much left unsaid.

What the element *evaalorg* might be Carroll had no idea, although if he persisted he might hit upon a chemistry text—and it was safe to assume that the Periodic Chart of the atoms would be the same in any of the galaxy.

He smiled. It was like trying to calculate the true size of Noah's Ark by assuming the length of a cubit. When you have finished calculating you have a plus or minus thirty percent.

He was about to select another case when the door opened softly and Rhinegallis entered.

"Why do you try?" she asked. Her voice and her manner were as though she had not walked away from his question of almost eighteen hours ago.

"Why?" he repeated dully.

"Yes why? Why do you insist in the face of the impossible?"

"Because," he said, facing her deliberately, "when I admit defeat James Forrest Carroll dies!"

"You're not suicidal."

"Madness," he said, "is suicide of the mind!"

Rhinegallis nodded and then looked down. He went to her and lifted her face by placing a hand under her chin.

"Rhinegallis," he said softly, "place yourself in my position. You are a prisoner of a culture that is inimical to your own. You are kept alive as a museum piece, a sample of life that refuses to be swayed by your mind-directing machinery. Of all the people of your race, you are the only one that knows and believes.

"Death—or worse—awaits you and yours at the end of some unknown time. You are in the position of being the only one that can do anything at all. Tell me, Rhinegallis, would you sit quietly and accept it?"

"Since I would be unable to do anything alone," replied Rhinegallis, "I would accept fate."

"Then die!" snapped Carroll. "Do nothing? Try nothing? That is stagnation—and stagnation is death!"

"I think Kingallis knows that," said the alien girl with a flash of recognition.

"Oh," said Carroll, crestfallen. "Then Kingallis gives me some old outdated volumes of books to play with, as a willful child is directed to cut old rags instead of the lace curtains. Since I must play games, by all means give me games that will harm no one!

"Mumbletypeg labeled 'dangerous' and celluloid toys made up to resemble fierce knives on the theory that children prefer such toys of the block and rattle nature. Bottles full of colored sand with skull-and-crossbones on them and directions against certain mixtures.

"The amusement-park roller coaster that seems dangerous—in fact someone knows someone who knows of a bad accident on it—but is, in fact, less dangerous than a ride in an automobile through traffic."

Rhinegallis was silent.

"Then what am I to do?" he stormed. "I have no one here of my own kind. Not a single understanding soul to lean upon in a moment of stress. A man alone in an inimical environment—and I am expected to play your tricks for you!"

"You—"

"Am I expected to aid you?"

"No," she said honestly. "Yet in deference to yo[illegible]r—"

"Deference!" he laughed scornfully. "Deference? No, Rhinegallis, not deference nor even respect. I am the experimental dog that must be pampered because my life and my mind and my body must be studied. Not deference, Rhinegallis, but the deadly fear of a spreading poison. Isolation."

"I am afraid that I should not have come," she said—but it was more a spoken thought than an attempt to convey anything.

"Then you tell Kingallis that no man will strive forever with no result. The donkey must once in a while get a taste of the carrot."

"What do you want?" she asked softly.

"And if I tell you will I get the truth—or just more runaround?" he asked.

"You are too suspicious," she said softly. "Deference you may not have, really. But you do have respect."

"What manner of respect can you possibly have for me?" he said with an open sneer.

"You are a strong man," replied Rhinegallis. "Your strength is sufficient to penetrate the mental beam. To defy King's attempts to study you, bar my tries at following your reason. Kingallis can point the remote hypnosis beam at me and from it can read my innermost thought.

"Against all resistance the hypnoscope is best—except against James Forrest Carroll. You, Carroll, resent this studying and prying.

Know—and feel gratified—that as little as you have learned from my brother he knows less of you!"

"And after defying all to completion the defiance is obliterated," replied Carroll bitterly. "For me—oblivion. For mine—what?"

"It need not be—loneliness," she said in a soft voice.

"Joy in the shadow of the sword?" he said sourly. "Pleasures of the flesh with an alien race that would not even understand my passionate gesture?"

He laughed shortly and roughly.

"Affection is but a prelude to understanding between mates. Tell me," he said with extreme cynicism, "have you laid your egg this year?"

"You—*no*!" she said quickly. "I was but trying to ease your lot."

He dropped his cynicism instantly. Rhinegallis seemed honestly hurt at his calloused attitude.

"You cannot, Rhinegallis," he said softly. "I am no longer a youth, to whom personal passion and pleasure is the ultimate. I give you a demonstration of affection." He placed both hands upon her shoulders and squeezed gently. He leaned down and kissed her lightly. "Not deep, but still a genuine gesture. Do you respond? No, you do not, for your race is utterly alien despite your appearance. Do you then expect me to continue, knowing that you do not even understand why I might derive sensual pleasure from such contact?"

"Even though we be alien," she said, "the fact that you do enjoy contact might give me—"

"Stop rationalizing," he said roughly.

"I'm not," she said. "There is a meeting of minds that far exceeds any crude mating of bodies."

"Then," he said with a queer crooked smile, "let's keep this on a mental basis, huh?"

RHINEGALLIS nodded quietly. She went to a side cupboard and took out a single reel of wire.

"Here is what you want," she told him. "Swiftly now, for Kingallis must never know."

"A nibble of the carrot," he observed.

"You want a whole meal?" she returned angrily. "Are you devoid of understanding?"

"I am permitted to play with innocuous trifles," he said. "When I discover their ineffectiveness I am invited to seduction. Failing that, I am offered some trifle of value. Tell me, Rhinegallis, how far will you go to lull my mind into inactivity?"

For answer, Rhinegallis turned and left him. Perhaps if Rhinegallis had been one of Sol's children she might have been crying or at least racked with the bitterness that comes of having an honest gesture scorned. Whatever her reaction Carroll shrugged as she left the room and he forgot her as he looked at the single recording.

"I hope," he said, "that this carrot is sweet. . . ."

Carroll came out of the semi-coma produced by the machine with a premonition of danger—not danger to himself, but a vague unrest, as though someone near to him were being threatened. He was alone and he knew at once that Rhinegallis was the only one of the aliens who knew the truth of this night.

Had any of the others come, they would have seen at once that he was working on a volume of importance and would have stopped him. However, as the minutes passed, the feeling of worry ceased and Carroll felt relief.

He attributed the feeling to a situation known as "wandering concern" which is based upon insecurity. He had been in the mental coma for hours, during which time much might have happened. He had succeeded, with Rhine's aid, in delving into the truth about the alien culture.

This placed him in jeopardy for while they laughed behind his back for toying with the useless records, their derision would change to far deeper distrust and hate were he known to have outguessed them. There is nothing more dangerous than turning a man's bitter joke against him.

So for hours Carroll had been both helpless under the machine and also doing that which was forbidden. He was like the small boy who has been swimming and is not certain of his future until he meets his parents and discovers whether they know of his truancy.

Carroll replaced the record. There was no sense in permitting Rhinegallis to be trapped. Besides, this might go on for some time—and if he could he would fight this out to the very bitter end. Who knew what he might learn next.

This night's work had been language. Not that the volume taught him Alien. It was a volume for aliens, to teach them the Terran languages. But by reverse reasoning it also

taught Carroll the alien tongue as well as a couple of good Terran tongues he did not know. He was—because he formerly possessed an excellent knowledge of American—now possessed of Russian, Chinese and Spanish, as well as the single alien tongue.

For the record dealt with concepts and then impressed the word-symbol of the idea in all tongues. And if *Hombre* means *Man*, conversely, *Man* means *Hombre*!

Best of all it was a specialized course that dealt with the kind of language scientists and engineers would use, though not exclusively so. Carroll felt cheered. Now he might mingle with them if he wanted to. Stealthily he left the laboratory to return to his room.

CHAPTER VII

Free-for-all

CARROLL passed a partly opened door down the corridor, and as he passed, he heard Kingallis utter a single word of dislike at someone unknown. Though it was in the alien tongue Carroll's well-trained mind gave him the translation in terms of real meaning rather than the transliteration of the word in terms of his mother tongue, as is often the case with a language learned after the initial schooling as a child.

Carroll paused instantly, and as he did so, the door opened more, showing both Kingallis and his sister. Kingallis shook his head angrily.

"So you gave him the record," he said flatly.

Rhinegallis was silent. It was obvious to Carroll that there had been accusal and denial previously but that his instant recognition of the alien word had been perfect evidence. Carroll sailed in instantly.

"She's given me nothing," he said sharply. "I just happen to be curious."

Kingallis turned from his sister to face Carroll.

"That is a bald-faced lie," he said.

Carroll's reply was in the alien tongue, a rather harsh alien platitude pertaining to the fact that a guilty man always requires a sucker to account for his own mistakes, whereas an honest man can admit an error.

Kingallis sneered and his eyes became glittery-hard.

"She gave it to you," he said. "This I know." He pointed to the minute temple-electrode—flesh-colored—and the spider-web thin wire that ran to the flat bulge in his coat pocket.

"So?" snapped Carroll. He measured Kingallis deliberately. The alien had a few years to give away, but Carroll had a few pounds to make up the difference. Also Carroll, being slightly older, was more of a competent judge of men.

Though this was not a man-to-man affair Carroll's judgment of the alien might be better than the alien's judgment of him. Furthermore Carroll knew himself to be cool-headed and alert.

"So Rhine has defied our rules," snapped Kingallis.

"And?" inquired Carroll overpolitely.

"Crime—and punishment! She has endangered our very future!"

Carroll smiled. "Seems to me that you have spent a number of years endangering the future of Sol's children," he said cynically. "Perhaps it is time to switch?"

Rhinegallis stood up. "I have as much right as you," she snapped at her brother. "My position is as high as yours. Carroll discovered that he was being tricked. Therefore there was nothing else to do but to regain his confidence."

"Seems to me that Carroll's discovery was entirely due to your inability to cope with him," snapped Kingallis angrily.

Rhinegallis laughed bitterly. "When will you learn," she asked sarcastically, "never to try to play games with your mental superiors?"

Kingallis fumed, "Shut up!" and, turning, back-handed Rhine across the mouth. The girl retreated, her hand to her face, covering the patch that was swiftly growing red. Kingallis followed her across the floor.

Carroll followed Kingallis. He caught the alien by one shoulder and whirled Kingallis, spinning him off balance. As the alien turned, Carroll's fist came across in a short jab that had every pound of weight and every erg of muscle energy behind it. He connected and it sent Kingallis reeling crazily across the room.

Carroll followed, warily. Kingallis recovered and struck out at Carroll, but his mode of fighting was untrained from Terran standards. Carroll opened his right hand and chopped viciously at Kingallis's throat, but caught the alien's arm instead.

THE alien yipped from the pain and Carroll followed him close and brought his fist up from under and caught the alien in the pit of the stomach. Kingallis folded over the blow and then unfolded in a series of retching gasps, his arms and legs working to bring him air.

Carroll lifted his foot. He drove it forward, heel-hard, against the alien's temple. The blow crushed the temple electrode into the skull as Kingallis went inert upon the floor.

"Come!" snapped Carroll.

"Come? Where?"

"Out of here!"

"But—?"

"Come along. You don't want to wait for the rest, do you?"

Rhinegallis took a quick look at her brother's inert form.

"Is he . . . .?"

Carroll grunted. "I'm not interested," he said. "Come on—you've got to show me the way out!"

"But I can't do that!"

Carroll advanced upon her. He caught her arm and brought it up behind her. He lifted gently.

"Now," he said, "you're going to show me the way out of here or I'll twist this off, see?"

"But I mustn't," she said.

Carroll smiled sourly.

"Rhine," he said pointedly, "you've lost your home right now. From here on in you are on the outside of your camp. Your best bet is to throw in with me and at least stay alive."

"I'll never help you."

"Fair enough," he said. "For I didn't help you. But this will let you know that Terrans have an attitude known as 'gratitude' which to your alien concept is both foolhardy and decadent. But no Terran, no matter how much he hated his enemy, would abandon to them one of their own that gave him help. We protect our friends, Rhine."

"Then we must hurry," she breathed. "But where can we go?"

"Where?" he echoed cheerfully. "We've got the whole world before us!"

"But you must hide as well," she said simply. "Because my friends will be seeking you in earnest, now."

Carroll nodded as he caught the implication. "I shall return to my friends," he stated flatly, "when I have evidence enough to prove myself. Then your people can go ahead and kill me if they can—but my world will be protected. Until I can convince them, I am the slender reed upon which depends the future of Sol. And," he added bitterly, "against what?"

"That I will never tell you," she said. "But we must hurry!"

It was five days later that Carroll's roadster—stolen from the alien's garage—arrived before a summer home in Wisconsin. Twenty miles from the nearest town of consequence it was set in a woodsy area near one of many small lakes.

"Here," he said happily, "we can hide—and we can live—and we can work!"

POLLARD slowly shook hands.

"Carroll again?" asked Majors.

The psychologist nodded wearily. "For some time he has been working quietly, though with deep preoccupation, which I suppose is normal. Whether he has been pondering over the absence of that black limousine and its mythically inimical occupants, I cannot say."

[*Turn page*]

Many Never Suspect Cause of Backaches

This Old Treatment Often Brings Happy Relief

Many sufferers relieve nagging backache quickly, once they discover that the real cause of their trouble may be tired kidneys.

The kidneys are Nature's chief way of taking the excess acids and waste out of the blood. They help most people pass about 3 pints a day.

When disorder of kidney function permits poisonous matter to remain in your blood, it may cause nagging backache, rheumatic pains, leg pains, loss of pep and energy, getting up nights, swelling, puffiness under the eyes, headaches and dizziness. Frequent or scanty passages with smarting and burning sometimes shows there is something wrong with your kidneys or bladder.

Don't wait! Ask your druggist for Doan's Pills, a stimulant diuretic, used successfully by millions for over 50 years. Doan's give happy relief and will help the 15 miles of kidney tubes flush out poisonous waste from your blood. Get Doan's Pills. (*Adv.*)

"But what happened this time?"

"He has disappeared!"

Majors blinked. "Just like that?"

Dr. Pollard smiled and nodded. "Just like that!"

Majors thought for a moment. "We can locate him," he said uncertainly.

"No," Pollard said finally. "That will not do. The chances are very high that Carroll may have gone to his summer home."

"Well, let's find out."

"Let him alone. You underestimate the cleverness of the paranoid. He will detect any surveillance. It is my contention that Carroll may have had a glimmer of lucidity—that he may have been partially convinced of his error.

"Majors, there is only one way to cure a paranoid and that is to let him cure himself. Once his own evidence shows the truth, then he will believe. But until that time, all evidence either supports his theory or it is a canard produced by those who want to show him wrong."

"So?"

"So let him be. He can do little harm. In the case of the normal paranoid harboring a persecution complex, it is something tangible against him—wife, neighbor or friend. In that case it is best to do something quickly to protect the innocent. But in Carroll's case it is an intangible—remember the case, Majors?"

"Of course."

"Well, it hasn't changed a bit. Carroll undoubtedly discovered something that his mind refuses to recognize. Therefore this hallucination of the inimical race that is barring Terra from progress.

"What Terra needs more than the man himself is to know what Carroll discovered. I don't know what he's doing nor where he's doing it, but we'll find out—and we'll let him alone."

"Sort of futile, isn't it?" asked Majors.

"It's soul-scarringly futile," said Pollard hopelessly. "He will resent any outside help that does not eagerly agree with him—and then suspect it of chiding tolerance. He can come back only of his own machination. But to probe further at him will drive him only deeper within himself."

Majors nodded. "We'll get young Sally back on the delivery job. At least until James Forrest Carroll reappears again."

Dr. Pollard nodded absently. "And may whatever he is doing bring him to reason!"

James Forrest Carroll sat on a tall stool in front of a workbench in the cellar of the summer home. Before him was a maze of equipment, a pile of written notes and some haywire circuits. He was smoking furiously to the amusement of the girl who sat reading in the single easy chair in the cellar. Finally she put down her book and looked up at him.

"Why did you accuse me of laying eggs?" she asked.

Carroll turned with a smile. "A shot in the dark," he said.

"It's not true," she said. "I'm no—"

Carroll shrugged. "Anthropomorphists have spent a lot of time showing that the humanoid form is best adapted to house intelligence," he said. "The upright carriage, the evolution of the forelegs into facile hands, the placement of the sensory-system in close locale to aid one another.

"The opposing thumb and the ability to lift either a sheet of cigarette paper from the floor or a small anvil from its rest. More and deeper-involved reasons can flow than you can think about."

"Which may all be true," she said pointedly, taking a cigarette from the package and lighting it deftly. She stood up then and rotated swiftly so that her skirt swung out.

"It may all be true," he said. "But not necessarily a matter of exclusive truth. There may be a batch of intelligent octopi and I'll bet that they have ah—er—octopomorphists—sitting around telling the little octopi that their shape is best adapted to house intelligence."

"All of which answers no question," she told him with a smile.

"So you have a humanoid shape to a remarkable degree. This shape is enhanced by the Terran clothing and the Terran cosmetics and, I might add, the Terran surroundings."

"Do go on," she said with grim humor.

"Your metabolism is not too different," he observed. "At least your digestive system is about as unselective as the Terran. That is normal for any reigning race of a system. Undoubtedly you do have a close approximation of the molecular structure, since I know that your planet is very much like Terra.

"Unfortunately I am not as deeply versed in organic chemistry as I might be or I'd be able to make a few tests. But, Rhine, the idea that two races in the galaxy being so similar in every way that they are cross-fertile is preposterous!"

"Eternity," said Rhinegallis with a murmur, "is that length of time necessary to permit everything to happen at least once."

Carroll grinned. "And that will be the last probability—and furthermore eternity will be sitting on its fundament for ten thousand galactic years after everything else has happened waiting for that little item to show up so it—eternity—can fold up and go home!"

HE TURNED away from her and addressed himself to the equipment again. He worked at it for an hour and then turned to her with a cryptic smile.

"You're a rather dangerous responsibility," he said.

"I know but it was your idea."

"What bothers me," he said thoughtfully, "is whether you will hinder in the end. You will not help now. But will you give me trouble later on?"

"I don't understand."

Carroll thought for a moment before answering. And when he did, it was on another subject.

"I need more information," he said.

"But why might I hinder?"

Carroll smiled widely. "If you don't know," he said, "I'll not be the one to suggest it. But I need information."

"Don't ask me to get it for you."

"I won't. I have little need. I can get it myself!" he said with a deliberate show of independence.

Rhinegallis looked at him steadily. She nodded. "I'm going too," she said.

"No—and why if you deny me help?"

"Because you aided me."

He shook his head. "That was because you were in trouble for having aided me."

"I aided you in the first place because you deserved it," she said softly. "And it does not negate my debt."

"But what do you hope to accomplish? Do you hope to trap me?"

"No."

"Rhine," he said, standing up and stretching, "you do not really understand Terrans. Remember this—I took you out of that concentration camp because I needed your aid in getting free—the guards, the garage attendant, to say nothing of the way home.

"I took you along because you were in danger—because of helping me, regardless of your reasons. Therefore I shall see that you are protected—now, against your own race—later against mine."

"Later?"

"After I unravel this mad pattern."

"You always insist upon some mad pattern," she smiled. "Really, it is very simple."

He looked at her angrily. "Just ignore it and maybe it will leave, huh? Bosh!"

"You can do very little against a phantom," she said.

"And therein lie my feelings," he said harshly. "This is more than honor, more than life itself. I'd have little compunction against killing you if it meant that the truth were to be known."

Rhinegallis shrugged. Her life was forfeit anyway after the run-in with her brother.

"But you said something about wanting more information?"

He nodded. "I'm no doctor," he said. "And my knowledge of the finer points of biochemistry is sadly lacking."

"You—"

"I intend to find some way of telling you aliens from humans," he said quickly. "There must be some way."

She smiled tolerantly though there was a question in her eyes.

"I intend to see that you have a most thorough medical examination," he told her. "There must be visible differences which can be told once they are known. Differences which"—and he nodded at her very human figure with its soft curves—"cannot be simulated by artificial means."

She chuckled. "Even though many of the means of wearing a desirable figure have been invented and used by human beings for many years? Don't blame me for that, Carroll. My figure is mine own."

"Then," he said in a hard tone, "let me see!"

"Call me what you will but I have a normal modesty."

He frowned scornfully. "Have you forgotten that we are of entirely different evolutions?"

Rhinegallis smiled coyly. "You forget," she said, "that to all intents and purposes I am a human being. You nor anyone else will ever get me to say or prove that I am not. That includes acting like one too."

"Let it pass," he said. "My judgment might be faulty. There are excellent doctors, however. If you claim that you intend to act as human as you can you'll have no objection to visiting a doctor."

"Not when necessary," she replied calmly.

"But remember, I told you that I would give you no information that would tend to harm."

"And I've told you that when I have evidence that tends to show my correctness I shall not ask for help—I shall take it!"

CHAPTER VIII

Matter Transmission

USING his knowledge of the alien tongue and coupling it to many of the so-called "harmless" records he had been permitted to toy with, Carroll found his work much simpler. There was that business of the circlet of wire mounted on the cylindrical podium in which vibrated a crystal.

He had a whole measure of that science, most of which, he admitted, was ridiculous, and meaningless to any Terran physicist unless he had the key to the art. A complete volume on electronic techniques would be meaningless to any man who knew nothing of electricity.

Most texts are written with considerable elision—electronics texts, for instance, show many circuits but seldom are they entirely complete. They omit the driving force—the source of energizing electricity, the filament supply, and other items which are unnecessary to the trained man.

Since many such items may be ambiguous it makes no difference whether the plate voltage is developed by batteries, rectifier-filter supplies, generators or a vibrator-pack that develops high voltage from a six-volt battery. It is sensible to omit them and merely label the "input" terminal with a symbol.

But couple a text with a complete knowledge of the language, especially a dictionary that is complete in its scientific sense, and you learn of batteries, voltage, generators and the like. You discover that an electron tube has this and that and perhaps why. Using a good sensible knowledge of physics plus ingenuity the science becomes less puzzling.

Similarly James Forrest Carroll was able to reproduce the science of the aliens.

All of this took time, of course—weeks. Weeks of testing and trying and fumbling. As Volta might be baffled by a common transformer where, though the input is shorted together through loops of wire and the output is similarly shorted, yet there is transfer of energy, so Carroll was baffled by the strange and bizarre thing that grew in the cellar of his Wisconsin home.

It was a large circular loop of silver-plated copper tubing. It was mounted on a cylindrical slug of high-permeability alloy which was magnetized to a high charge. The crystal was common enough but its connection made little sense from the Terran point of view. The Ancients used to use crystals for jewelry and would have been bewildered at the modern idea of cutting them in slabs to make standards of frequency.

Finally he surveyed his work with a satisfied smile. He snapped it on and a shining plane of totally reflecting energy filled the circular loop of wire.

"It isn't Lewis," he said. "It's James Forrest Carroll Through The Looking Glass!"

Rhinegallis shook her head. "The proper title is 'Alice Through The Looking Glass'," she told him.

"You have a rather extensive Terran education," he observed.

"Would any Terran be without an education?" she countered.

"Doubtless far superior to any normal person," he grunted, "thanks to that mental educating dingus of yours."

"And partly due to hard work," she said. "Give me some credit."

He smiled wanly. Then he snapped the instrument on and off and looked at the perfect plane with interest.

"Wonder if it might be possible to warp it into a perfect parabola," he said thoughtfully.

"I wouldn't know," she replied, "but it would make a fine telescope, wouldn't it?"

"Whole gear weighs about five pounds." He grinned. "The thousand-inch mirror would be a definite practicality. What we couldn't see with that!"

"Might as well go," she said humorously. "You're like the man who discovered motive power and then used it to yell over great distances with instead of going there."

"So far," he said seriously, "there's little to be gained by this gimmick. I'm like the first man on earth to own a telephone. I've no one to talk to."

"But tell me, what did he do?"

Carroll smiled in a superior fashion. "What

I'm going to do to try this out," he said. "I'm going elsewhere with a second model and establish my own line of communication.

"So far as I know the only other ones are in the hands of your people—and normal, happy, serious-minded folk seldom call their enemies on the telephone to pass the time of day. So, Rhine, if you'll stay here—"

"I've no place to go," she told him. "I'll stay. You'll not be long?"

"I've got to build it first," he said. "I've got the parts here but it's not assembled."

"But—"

"It's 'tinkertoy' fashion in a suitcase," he said. "I obviously can't carry a six-foot circle of half-inch copper tubing fastened to a podium of heavy metal through the streets of Ladysmith without trouble. I'm leaving tonight, Rhine. You wait for me here."

"I'll wait," she said with a smile.

DOCTOR POLLARD blinked when Miss Farragut announced James Forrest Carroll.

"By all means," he said, and then sat back to see what Carroll had to offer.

Carroll came to the point at once. "I have proof," he said.

"You have proof," smiled Pollard, "but you leave too many holes in the matrix."

"Meaning?" asked Carroll.

"From time to time," replied Pollard, "men have come forward with the idea that all Sol is being guarded or watched or kept suppressed by some alien culture. Charles Fort said 'Maybe we're Property!' and others have had the same idea.

"This alien culture always is superior of mind and body and capable of furthering any evidence to dispute its being. The discoverer is hunted down and chased but usually eludes the aliens long enough before he is caught to tell the world about it.

"Now," continued the doctor, "aside from the fact that all stories must have some sort of sensible ending your tale misses one vital point that all such tales seem to.

"That is just the simple fact that these omnipotent, omniscient and omnipresent beings who have kept the world in ignorance for twenty thousand years have not the intelligence to slay the single discoverer!"

Carroll smiled. "I was not slain because I was useful to them. I've spent weeks with them."

Carroll spent the next hour telling Dr. Pollard of his experiences among the aliens. He omitted only the truth about Rhinegallis.

Pollard's comment in his own shorthand was, "Perfect self-justification."

"Now," said Carroll. "May I show you something that I've stolen from them?"

"Of course."

Carroll opened his suitcase and set the metal podium on the floor. He unrolled the length of silver-plated copper tubing and shaped it into a circle. He fastened the terminals to the podium with thumbscrews. Then he snapped the switch and the shimmering plane appeared.

"Wonderful," said Pollard hollowly. "But what is it?"

Carroll smiled. "You are a hard man to convince," he said. "But now that I have shown you this, I shall show you one of them!"

Carroll stepped into the shimmering plane and disappeared.

POLLARD gave a cry of fright and raced around to the other side of the plane but Carroll had gone. Then he shrank from the thing; it was as though the shimmering plane of perfect mirror was beckoning to him. And for one of the few times in his life, Dr. Pollard knew and recognized a psychopathic fear of the Unknown.

Carroll, however, knew the facts. He stepped into the basement of his home with the same motion that had carried him over the podium into the mirror in Pollard's office.

"Now," he told Rhinegallis, "I'm taking Dr. Pollard a live specimen!"

He grabbed Rhinegallis by the wrist and dragged her through the mirror into Pollard's office again.

"Here," he said, "is Rhinegallis, one of the inimical aliens."

Pollard was dumbfounded.

Carroll hurled the girl at Pollard. "I want as complete a medical examination as you can give," he said. "Obviously if she and her race evolved on some distant stellar system, she can not be more than humanoid. Follow?"

Pollard nodded. He faced the girl uncertainly and said, "Do you mind?"

Rhinegallis blazed.

"Of course I mind," she snapped, eyes flashing.

Carroll seated himself indolently on Pollard's desk. "If you are really alien," he

observed ironically, "you will most heartily object!"

"I'm Terran," she insisted.

"Then why cavil at proving it?" he urged.

"I don't have to!"

"I'm afraid you do," he said. "Fact of the matter is I'm still holding a rather high position in the Lawson Laboratory. I can—and will—order Dr. Pollard to do it!"

Rhinegallis faced the doctor. "I'll not have it."

Carroll spread his hands out in a self-satisfied gesture. "Q.E.D.," he said. "Aliens will object. True Terrans have nothing to fear."

Rhinegallis turned upon him angrily. "How about you?" she snapped. "Are you willing to have yourself examined?"

"Dr. Pollard knows me," he said simply. "There is no reason for me to go through with this."

"I have friends."

"Aliens!" He turned to Pollard. "You have always disbelieved me," he said. "Had I brought you here by any other means Pollard would have believed that there was nothing to my tale and would have given you at the most a very superficial examination.

"However, after bringing you through the teleport, he is amazed enough to wonder. Pollard, I charge you. Give her as complete an examination as is within your ability and power!"

Pollard turned to Rhinegallis and asked her name.

"I am Rita Galloway," she said. "And I'm Terran!"

"Normally," he said with a half-smile, "no one is expected to go through such an outrageous thing. But do you really mind?"

Rhinegallis paused. "Not really; I have nothing to hide. But like all people I resent any invasion of my privacy. The Constitution stipulates that such shall not be done except with just cause. Not that an innocent man has anything to fear. It is just protection for the integrity of the individual. However, if you insist."

"Thank you," said Pollard. "Into this office, please."

Carroll followed.

"Not you," snapped Pollard.

"I'm watching," Carroll insisted.

"Look," said Pollard testily, "you may give orders to have things done that I do not approve of but you have no right to tell me how to run my life. We'll have none of it!"

"But—"

"Want it done?" demanded Pollard.

"I—"

"Look, Carroll, you can't fire me. You may still hold a responsible position but it is an honorary status. Now, if you want me to go ahead, just sit quietly and wait!"

"I'll wait," said Carroll.

THREE hours later, Pollard emerged from the inner office with several sheets of paper. "She is of Anglo-Russian origin and shows the racial characteristics of that mixture.

"Her blood-type is Type Three, Rh Negative, Sub-classification three-GH. Temperature, blood-pressure, and heart normal save for a slight murmur. Saliva test perfection itself. Blood count slightly low—normal enough and not near anemia.

"She is, physically, biologically, and emotionally, a specimen of excellent health, female, age twenty four years. Appendix removed five years-odd ago. Unmarried. Spent some time in the tropics but is naturally light complected."

Pollard shuffled the papers as Rhinegallis entered the room.

"In the interim," he continued, "I've had her checked on. The Bureau of Identification confirms her fingerprints and physical characteristics, Social Security Number and blood type. Photo checks despite several years interim.

"Born in Indiana, raised in Chicago on Drexel Avenue. Schooled primarily in Chicago, left college after three years. Father and mother deceased. Now," he said angrily, "is there anything more you need?"

Carroll blinked. "I should have guessed," he replied very slowly.

"Guessed? Guessed what?"

Carroll nodded slowly. "Doctor, forgetting the present situation, what is your opinion on the evolution of an extra-solar race?"

"I'll try to forget the present idea," replied the doctor, "and tell you that so far as I can judge, it would be utterly impossible for any race not our own to have more than a very few superficial items of resemblance to the human. More than likely they would evolve in an entirely different shape, though very necessarily functional."

Carroll nodded. "How about brain surgery?"

"What about it?"

Carroll shunned the doctor at that point. He faced Rhinegallis with a bitter smile. "So you have Terran characteristics. And your offer of affection might have been honest—despite the alien brain inside your skull!"

Rhinegallis gasped. "You accuse me of—"

"Well, there must be some logic in it!"

CHAPTER IX

Court Is Dismissed

INSISTENTLY the communicator on Pollard's desk buzzed and Miss Farragut called him. The doctor excused himself and left them alone.

"There must be proof," insisted Carroll.

"There has been plenty of it," she told him.

"There's one thing that your alien brain in a human body will not do," he said. "The rest can be managed. You can falsify records—perhaps you were a natural child of Terran parents—Terran parents with alien brains—as yours is now. I don't know but I'll find out."

"How?"

"Pollard's psychiatric notes," he said explosively. He headed for the examination room and looked around. There, behind the door, was a pile of papers on a small table. To get at them Carroll nudged the door shut. It went closed with a faint thud.

Almost instantly afterwards there came the sounds of many feet in the other room.

Rhinegallis screamed something out of fright and peril. There were the sounds of a scuffle, after which came. . . . Silence!

Carroll hurled the door open and raced across Pollard's office toward the teleport. As he reached there he saw the last traces of Rhinegallis's feet being dragged over the bottom of the wire circle into the mirror. With a cry of anger, Carroll hurled himself into the teleport just as the office door burst open to admit Pollard and Majors.

Carroll's return passage through the teleport was rough. He bumped someone and his force sent them sprawling. Then he was through and facing Kingallis, who was still reeling backwards.

Carroll plunged forward and caught Kingallis by the throat. The alien twisted out of Carroll's grasp and fought back. Carroll hit him hard and followed it with an insane rush that carried them to the far end of the cellar, where Kingallis tripped on a small box and went down with Carroll on top. Carroll rapped the alien's head against the concrete floor and stunned him.

Kingallis returned almost instantly.

Carroll looked down in his face and snarled, "Now—why?"

"Why?" asked the alien defiantly.

"Yes—why? Why is all this going on?"

"The universe is not big enough to hold us both," snapped Kingallis.

"Then it is true. You and your people have been suppressing our research because you fear that we will be able to beat you. And we will, Kingallis. We will!"

"You won't live long enough," snarled the alien.

Carroll's mind worked rapidly. If nothing else, he had now discovered the truth of why. The alien culture wanted universal conquest. To gain it, they were suppressing all research on the Lawson Radiation, which was their main hope for victory. Instead of fighting to suppress it, they had found it much easier to weasel their way in and fake a report here and line there with a mere handful of men. No science could advance when true discoveries were reported as failures and false data were supplied to send the investigators along blind trails.

But now there was real danger. Since Terra was cognizant of the peril Terra would be destroyed. Destroyed or conquered early—the aliens not waiting for the normal development of their plans of expansion.

Carroll looked around for something to tie Kingallis with. And he saw—

Rhinegallis, supine upon the floor, a wide thick strap constricting her ribs. Her eyes were closed. The pulse in her shapely throat was fluttering weakly.

"You swine!" said Carroll.

Kingallis threw him off, leaped to his feet and raced for the teleport disc. He plunged through as Carroll dropped to the floor on one knee and started to fumble at the heavy strap.

HE TORE his fingers and he cursed, and he looked wildly for something to cut the thing with. His eyes caught the tinsnips on the bench and he arose to get them as Pollard came through the teleport.

Back in Pollard's office the psychologist looked at the perfection of the silvery plane and shuddered mentally. Then he said, "I

don't know what's up. but I'm going—through!"

Majors nodded. He had not seen Carroll using the thing at all. His mind was baffled but not psychopathically afraid of any gadget that made men disappear so quickly.

Pollard stepped gingerly into the circle and came through. It was like walking through a ring. There was neither pain nor strain nor feeling. He might have been stepping over a slight, wide sill. Then he was looking down at Carroll, who was fumbling at the strap. Carroll cut it through as Pollard knelt beside the girl.

Then as Pollard made an instant check of the girl's heart and sighed with relief, Carroll rose and turned on the doctor.

"Now," he said, "are you satisfied?"

"Satisfied?" echoed the doctor.

"They almost got her!" snarled Carroll.

"Oh?"

"The teleport is theirs. They have many of them. They were worried about discovery, so they came and—"

"They did?" asked the doctor sarcastically. He turned to Majors. "I was wrong," he said.

"Wrong?"

Pollard nodded sadly. "I believed that Carroll would not direct his hate towards anything living. I did not anticipate his fastening the embodiment of his hallucination upon a human being!"

Carroll turned to Pollard with a glassy stare. "Just what do you mean?" he asked in a flat voice.

"That was an attempt at sheer wanton murder!" replied the doctor.

Majors looked down at the girl and his face went black with anger.

"Why," he said, "that's Rita Galloway!"

Pollard looked at Majors. "Who?"

"Rita Galloway. The head librarian over at the Scientific Section of the Foundation Library."

"She is Rhinegallis of the aliens," said Carroll quickly.

Pollard shook his head. Majors growled. He started to speak and then closed his lips tightly.

"Go ahead," said Pollard.

"All right," snarled Majors. "It was my fault!"

"Your fault?" exploded Pollard.

"Yes. The day after Carroll took that delivery job from little Sally, he spent the evening in the Library looking up some rather complex stuff. Miss Galloway was called upon quite often, so she said, and came to me because she knew we were interested in Carroll.

"Shut up, Carroll, and sit down before I kill you! I told her the entire score and she said that if Carroll was truly as interested as he seemed she was going to ask for a leave of absence and see that he was helped. He seemed to be interested in her."

"Does helping him include running off to Wisconsin with him?" asked Pollard.

"They had words with her brother Kingston," said Majors. "Seems that her brother was concerned about her reputation, and said as much. Carroll made some remark about there being little in common between them, that no human being would find her interesting from a physical standpoint, just as she would find any normal relationship with any human being completely devoid of satisfaction.

"Kingston Galloway instantly took this to be a slur upon his sister's character and he jumped Carroll—also making it quite plain that he would stand for no more foolishness. Carroll clipped him hard and left, taking Rita with him. I got that from Kingston, who was out loaded for murder."

Pollard nodded. "A complex case of misdirected opinions," he said with a grim smile. "Carroll thoroughly believes that she is alien and as such incapable of forming any true association with a human. He says so and her brother misconstrues his belief into an insult to her character."

Majors turned on Carroll. "This is a matter for the police," he snapped. "Come along!"

Carroll paused, looking down at the girl. Pollard scooped her up across his arms and went through the teleport. By the time that Carroll and Majors followed Doctor Pollard was working over the girl in his laboratory.

Carroll shrugged. "If he fails." he said, indicating Pollard, "we might be able to hold an autopsy."

Majors turned away, sick at heart.

ATTORNEY BARNETT rose impressively.

"Your Honor, and Gentlemen of the Court," he said. "We do not deny the allegation. We wish to point out, however, that despite my client's state of mind he has and will be of continued value to civilization.

"Incarceration in a penitentiary will not permit him to continue his research. He

should be permitted this outlet. Therefore, for my first witness I call Doctor Harold Pollard."

Pollard was put through the legal ritual and took the stand.

"Pollard, what happened to James Forrest Carroll?"

Pollard cleared his throat. "James Forrest Carroll followed the pattern of several of the top physicists working on the Lawson Radiation," he said. "May I express a pertinent opinion?"

"Objection!" shouted prosecution.

Judge Hawley frowned. "Is the opinion based on the crime?"

"No, your honor. It is pertinent to all such cases."

"Objection overruled."

"May I take exception?" asked Frank Barre, the State's Attorney.

"Let us examine the personal opinion first," replied the judge.

Pollard nodded. "It has been the opinion of the men at the Lawson Laboratory that all of these men have discovered something that has driven them into amnesia. Amnesia, you understand, is the mind's withdrawal from a distasteful reality.

"Of all of them, however, Carroll is the only one who has shown a sign of recovery from a state of complete amnesia pertaining to his work. Carroll returned with an hallucination of a strange alien culture at work to suppress any research."

"I want to establish Doctor Pollard's reputation and ability as a physician, surgeon, and practising psychiatrist," said Barnett.

Frank Barre stood up. "Waived," he said. "Prosecution agrees that Doctor Pollard's training and position are impeccable."

"Thank you," replied Barnett. "Go on, Doctor Pollard."

"In usual cases of paranoia the subject develops a persecution complex. Usually it is directed against his fellow man. In Carroll's case this was fastened upon the mythical race on another star.

"Carroll believes the Lawson Radiation to be the wasted energy from a space drive capable of interstellar travel. This alien race is supposed to be suppressing the research for a reason not quite clear, though Carroll believes—"

"Tell us what you know, Doctor Pollard."

"As with usual cases Carroll went to great pains to produce certified evidence. While preparing the so-called facts, Carroll is in a state of self-hypnosis—hallucination—in which he was actually living with the aliens and stealing their stuff. When he brings his evidence forward he attributes it to their culture rather than the product of his own brilliant mind."

"And what do you recommend?" asked Barnett.

"Since the Lawson Radiation was the thing that caused his downfall in the first place whatever he found was important. We may have been lax in our efforts to bring Carroll 'back'. Yet, we feel that any measure that will help us to know what it is—is permissible.

"Even attempts at murder?"

Pollard shuddered. "Of course not," he said. "I should have said any legal measure."

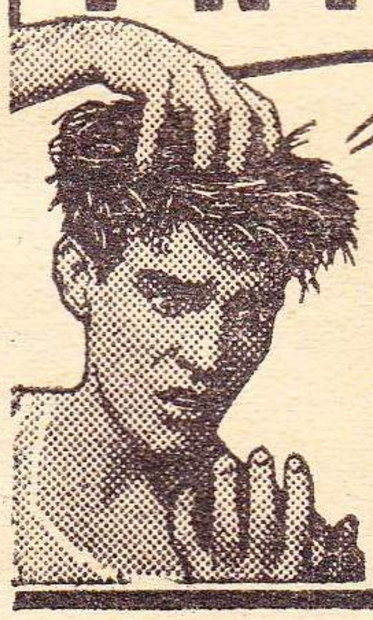
"Thank you," replied Barnett. "I'll now call James Forrest Carroll. I want the Court to hear his own story."

"Carroll," said Barnett, once the man was legally installed on the witness stand, "did you try to kill Rita Galloway?"

"No!"

[*Turn page*]

CAN YOUR SCALP PASS THE *F-N TEST?



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3 And TUNE IN: 2 NETWORK SHOWS! "The Adventures of Sam Spade" Sun. evenings, CBS Network; "King Cole Trio Time" Sat. afternoons, NBC Network.

"Did you try to kill a woman you knew as Rhinegallis?"

"No!"

"Then who did try to kill her?"

"Her brother, Kingallis!"

"Do you see this man in the courtroom now?"

"Yes," said Carroll pointing to a man at the witnesses's table. "That is Kingallis."

"We will show later that the witness identified has been known all of his life as Kingston Galloway, and is the brother of the woman." Then Barnett faced Carroll again. "Do you mind talking about this?"

CARROLL shook his head as he said, "Not at all. I have been most deeply frustrated. Time after time I have produced evidence to show the truth of the matter. I have gained no one who will believe me."

"You say that Kingallis tried to kill his sister. Why?"

"Because she betrayed him by helping me."

"Your honor, you will recognize the importance of this statement. It—like so many others—is a half truth. It is true and yet the implication is not the same. The fact is, your honor, that Carroll actually has reason to believe that Kingallis came through the teleport to take revenge. This is part of the hallucination."

He turned again to Carroll. "You claim you were held against your will in a building in Virginia?"

"I was."

"Then tell me how it was that you were seen performing your job during the time you claim to have been prisoner—and disappeared at the time you went to Wisconsin with Rita Galloway?"

Carroll smiled. "By the same explanation as the twin Sallys. One, you remember, went into the black car so that the men could read the day's reports and fix those that were informative. The other went into the drugstore for a bite to eat in order to fill in the interim. There was a man made up to resemble me."

"You see, your honor, Carroll believes his hallucination implicitly."

"Obviously."

Barnett faced Carroll. "Prosecution claims that you, yourself, attacked the girl in a state of anger because she proved your beliefs wrong—and in hallucinatory hope that a complete autopsy would prove you correct."

"This is untrue."

"Your inventions—"

"They are not my inventions. They are thefted from the alien library."

"Carroll, you have a brilliant mind."

"I was mentally strong enough to defy their thought machines," replied Carroll.

"And you have an extensive education in physics and science?"

"I have."

"Now tell me, are any of these inventions beyond understanding?"

"Naturally not. They are based upon physical laws that are at present unknown on Terra."

"As—say—electricity was unknown in the days of Galileo?"

"About like that."

"Then, Carroll, it might be possible that you yourself made these discoveries?"

"I might have," admitted Carroll. "But—"

"Under a hallucination? To prove to your own mind that you were stealing something of scientific excellence?"

"There is the matter of the language."

"Irrelevant. It is a tongue no one here understands."

"Kingallis! *Vol thes nil kantil res vi pon tere. . . .*"

KINGSTON GALLOWAY blinked as Carroll tongued his syllables, then began to laugh.

"You see," said Barnett, "anyone can mouth meaningless words and call them a language. You can, if you are brilliant, even assign meanings to them. Esperanto, among others, is a manufactured language."

"Yet I claim it true."

"What about your own future?"

"I care nothing for myself, it is only the future of Sol that concerns me."

"Your honor," said Barnett, "There are two things I want to say before I close. One is that James Forrest Carroll is not sane. Therefore he should be committed to an institution. The other is that James Forrest Carroll, for all of his insanity, is still a brilliant physicist.

"He knows something about the Lawson Radiation that men have gone mad for previously, that men have sought for thirty years, that time and money has been spent for. Therefore, in this institution, James Forrest Carroll should be permitted to experiment at his own will.

"For if nothing else he will produce many

other marvelous things in an effort to prove that the science of the aliens is far greater than ours."

The judge asked Carroll, "You have a reason for believing all this?"

"I know why. The alien culture wants to conquer the universe. Because we are very close to them in scientific achievement they have cause to fear us.

"The Lawson Radiation is the spilled energy from their interstellar ships and possession of this secret will permit Terra—or any other system—to fight them on their own terms, even to beat them back to their own system. Therefore they are suppressing all research by clever misdirection."

"I see. You seem to have an answer to every angle," mused the judge.

"The trouble is," said Carroll, "that people insist upon judging me in accordance with their own views—which means that they have an answer to my every objection."

"In other words," smiled the judge, "the world is wrong and you are right?"

"Precisely."

"You know what is said about such people?"

Carroll smiled. "They said the same thing about Galileo, Columbus, the Wright brothers, Bell, Edison and Marconi," he said.

"It is often hard to tell," said the judge. "However, there are some good ways."

Carroll faced the judge. "Sentence me," he said in a surly tone. "For only by silencing me can you stop me from seeking you out."

"Me?" asked the judge in surprise.

"Either you are Terran and must therefore do everything to help me unravel this mad pattern or you are really an alien who has succeeded in penetrating to a high place in our civilization—and are therefore interested in seeing that my knowledge of you is not given any recognition."

"But why—"

"It has been said that when the superman arrives, he will be well concealed and will occupy a high place in the world without anybody knowing about it. You may or may not be. Yet by your decision you will prove it to me!"

"I see no reason to defend my opinion against your attack," replied the judge. "However, in view of the circumstances, I hereby direct the jury to return a verdict of 'guilty of criminal assault while in an insane condition' and a sentence of committal to an institution until such a time as you are pronounced sane and rational. Court is dismissed!"

CHAPTER X

Flight from Asylum

JAMES FORREST CARROLL was very careful in the days that followed. With meticulous care he watched those about him in the asylum, always wary of showing either too much interest or too much neglect. The other inmates did not bother him particularly nor did they irritate him. Not even the fact that he was committed to an insane asylum caused him to lose heart.

Carroll cared little for his immediate surroundings for he knew that once he made his point and carried it to the awakened Solar System, not only would all of the past suspicion be forgotten but he would receive an even greater reward for having suffered to carry on.

Then, as the flush of newness wore away, the guards and attendants let him alone more. All of them were trained in handling the insane and they treated each new inmate with considerable suspicion until the exact nature of the patient's instability was known.

Carroll's main and only argumentative period came when he was not permitted to work as he pleased. And so long as no one mentioned the word 'alien' in any way he was silent—lost in his thoughts and his plans.

As soon as they furnished him with working space, Carroll knew that his incarceration was a godsend. For—barring the chance that one of the guards might be alien—if he could not get out they could not get in. This was security.

The one off-chance worried Carroll. It would be hard enough to segregate the few humanoid aliens from the mass of humanity. But with the aliens occupying human bodies it was impossible. Just how it was done Carroll could not say but he considered the problem and arrived at a solution from sheer deductive reasoning.

It was pathologically impossible to consider surgery—the gross transplantation of a brain. For one thing—among many—there is the matter of blood supply. Incorrect blood matching causes death in a transfusion. This is not because of the mismatch in the blood stream per se, it is because the metabolism

of the entire human body is not matched to the different type of blood.

To transplant a brain would require that something be done about the blood supply—if changed to match the brain the body would die, if not the brain would die. And there was no remote possibility that any alien brain would match human blood.

It is even difficult in many cases to graft skin from one part of a human's body to another, let alone grafting skin from one to another body—and the possibility of cross-grafting across the line of demarcation between Terran species was unthinkable.

Just with common skin.

The brain?

Impossible!

There was, however, the whole matrix of mental gadgets, hypnotic beams, educators and other gewgaws of the alien culture. The old thought patterns could easily be erased and replaced by a new system. That would—despite theological arguments to the contrary—result in a new person. For all beings are what their experiences and their training makes them.

A sentience produced in a humanoid body on a remote planet and mentally hurled into a human brain will change the human to an alien in thought and deed—but capable of living as a human! There is nothing in thought that is inimical as there would be in the sheer complexity of biochemistry.

Thoughts, even nasty vagrant thoughts, do not kill. But how large is the lethal dose of polio virus or potassium cyanide or unmatched blood?

AN AUTOPSY they might some day perform, but unless they could read her thoughts, they would find nothing! How then to identify the alien?

Nay! How then to prove that there were aliens!

There were both excitement and suspicion when Carroll built the teleport in his asylum laboratory. It was too much like incarcerating a man who had the ability to walk out of the place without half-trying. In fact, as one of the guards put it, that's exactly what it was.

It was Majors who smiled and shook his head. He pointed out that so far there were but two of them, one in the office of the psychologist Pollard and the other in the Wisconsin home of the inmate himself. Both were turned off.

Majors, not really understanding the principle of the things, had them both placed in a sealed room. Whether Carroll could turn on an inert machine from a remote place he did not know and he was taking no chances.

But Carroll's experiments with his new teleport seemed innocuous enough. For several days he fiddled with the tuning and synchronizing controls that were used to tune one teleport to the other.

He kept constantly 'ON' the switch that remotely operated any distant teleport that his own happened to be tuned to but his work did very little good. He found the two that were sealed in the tiny room and knew them for what they were. Carroll was seeking the teleports of the aliens.

For days he searched the—subspace?—for the alien teleports and found none. Then in a desperate measure, Carroll finally went through to the room in the Lawson Laboratory and, using some of his store of tools, broke the sealed door.

Brashly Carroll stole an automobile. Equally rash, he drove at breakneck speed along the roads that led him up into the Virginia mountains along the back-path that he had traversed only once before in a conscious condition, and then from the opposite direction with Rhinegallis pointing out the way.

It took many hours before he came to the little side-road that led like a mountain goat's retreat up into the top hills. It changed from a side-road to a mere trail and then branched from a mere trail to an unkempt, rutted footpatch that jounced the automobile terribly.

Miles along this rocky path, Carroll turned into a clearing—a well-remembered clearing, and he looked across it—in surprise. The building itself was gone! No wonder he could find no teleports!

And the words of Kingallis returned to him. "You won't live long enough!" the alien had said. "The universe isn't big enough for both of us!"

The rats had deserted the doomed ship!

It was so pat—so perfect! Now they would say that there never had been any aliens. At every turn Carroll was blocked and stopped and frustrated. How long the aliens had been guarding Terra he did not know. Perhaps about the time that the Lawson Radiation was discovered, or perhaps even before.

No matter how good they were at intercepting things, the aliens could not keep some things from leaking out. They might have been here for centuries awaiting the man Lawson who was the discoverer.

They might have been covering information that would have led to the discovery until they could no longer stop it. At that point in the rise of any culture the discovery of such a factor would be almost automatic. . . .

Taking any science as a parallel, civilization makes its discoveries as it is ready for them. The discovery of radio would have been impossible before the knowledge of electricity. Nuclear physics would have been impossible without a working knowledge of simple chemistry.

Each science stood upon the shoulders of the other. Electronics aided astronomy, mechanics aided electronics and chemistry aided mechanics. Physics gave men more information about chemistry and chemistry was a foundation stone for electronics.

HOW long that had been here Carroll did not care. The pertinent thing at present was the simple fact that *now they were gone!*

Gone because they dared not stay!

Carroll cursed. It was his fault. Whatever was being done to eliminate Terra as a threat to the aliens' ideas of aggrandizement was being done because James Forrest Carroll had been instrumental in uncovering their schemes. Had he remained in ignorance there would have been no reason for their latest plan—conquest for aggrandizement does not include extermination.

To exterminate an enemy spells economic failure. There is little glory in being the Lord of All when *All* consists of burned planets, dead cultures and the hollow grinning skulls of a billion billion intelligences.

Homage comes not from a skull.

There, in the moonlight of the clearing where once stood a large alien edifice, Carroll took from the back seat of his stolen car the knocked-down teleport and set it up alongside the road. He stepped into it and emerged in his asylum laboratory.

He ignored the fact that both car and teleport were stolen and abandoned. The only thing of importance now was the safety—the personal safety—of all Terrans, whether they believed or not. That he alone had good reason to believe in the threat was unimportant. There have been many cases in the world of history when one man alone stood against the world and was right.

Let them scoff.

Yet Carroll felt the full impact of helpless frustration. He was pitted against an alien culture capable of scientific marvels such as the teleport and interstellar travel and other things. They were capable of destroying the solar system while the only man who stood against them was incapable even of discovering how they intended to do it.

He threw himself into his work and the days sped past as he built and experimented and planned—and all too occasionally failed. When his cohorts came to him with the announcement that the first sixty-foot paraboloid of revolution was to be initiated that day at the Lunar Observatory Carroll merely nodded and returned to his work.

He cared not at all that the new observatory was to be called the Carroll Observatory in honor of the man who made possible the perfect reflector. At that time, Carroll was busy with his invisible fields of force and spacial planes of stress and did not want to be bothered with trivia—especially trivia that he had really had no hand in inventing.

A lot of good the Carroll Observatory would be to mankind if the Solar System were destroyed!

MAJORS entered Dr. Pollard's office with a large glossy photograph in one hand. Pollard looked up amusedly as Majors said, "I'm getting psycho, I guess."

"Yes? And what makes you think so?"

Majors laughed. "Because every time I get a problem I seem to come to you instead of going where it can be answered by theoreticians and physicists."

Pollard smiled. "I think you come here because this is one place where you can hold your own with another man who can hold his own with you," he observed.

"Well," admitted Majors, "you don't understand theoretical physics as well as I do and psychology is over my head. Anyway, what do you make of this?"

The photograph was of a patch of sky. Pollard shook his head.

"Is this a test question?" he asked. "Remember, I'm the psychiatrist and I'm supposed to hand the patient strange items and ask them what they see in them."

Majors laughed. "This is a section of Boötes."

"Bootees," murmured Pollard irrelevantly, "are knitted gadgets you put on babies' feet."

"All right, I'll leave quietly," chuckled Majors. "Seriously, though, look at this." He pointed out a tiny smudge among the myriad of stars.

"Well?" asked the doctor.

"It shouldn't be."

"Maybe a flaw?"

"Nope," objected Majors. "It persists through twenty-seven photographs made one minute apart—each exposed for one minute."

"Um. What is it?"

"Don't know," replied Majors. "But it is darned interesting."

"Bootes is the region from whence comes the Lawson Radiation, isn't it?"

Majors nodded. "That's why they sent it to me. It was taken by the Carroll Telescope on Luna, a sort of tribute to Carroll that the first photographs and work done by his invention be directed at that portion of the sky he worked so long on—to his own downfall."

"Tell me, Majors, do you often get these kind of smudges?"

"Not this kind but there have been other kinds."

Dr. Pollard looked at the smudge. "Let's take this to Carroll," he suggested. "Maybe it might mean something to that hidden portion of his mind that refuses to admit what it knows about the Lawson Radiation."

"Through the teleport?"

"Why not? If it's not available at the other end, we'll just meet a solid mirror and can't step through. That worried me for a long time, that idea of not having a place to go to. Just step out into—heaven knows what—because the other end wasn't connected. Come on!"

The teleport in Carroll's asylum laboratory gave the physicist warning that they were coming through. He turned as they entered with an annoyed smile on his face. Before him was a long paper record of Lawson Radiation recordings that Carroll was studying through a magnifier.

Majors handed Carroll the photo, saying, "What do you make of this?"

"It's a bad blur—like a misfocused image," replied Carroll.

"Yes—but why?"

"You've heard of the Einstein Lens?"

"Vaguely, but thought it was just a dream—a probability that never happened."

Pollard shook his head. "I don't know about it at all," he admitted.

Carroll smiled tolerantly. "Light has energy and energy has mass," he said. "Ergo light has mass. Masses attract one another according to the Newtonian Law of Gravitation. Ergo light is bent by passing close to a mass."

"I see," said Pollard leaping to the right conclusion. "Then light radiated from a very distant galaxy may pass close enough to a dark mass—with Terra, the mass and the galaxy in line—to have the distant galaxy focus itself here?"

"Yes," replied Carroll. "The mass acts as a biconvex lens because it bends all tangential light toward the center as the beam passes."

"But the Einstein Lens effect doesn't make smudges like this," objected Majors.

Pollard whistled. "You mean to say that the Einstein Lens is known to be a fact?"

"Right. Several cases are known and accepted as such!"

"Well!"

CARROLL looked up from the smudge. "A negative lens," he said, "would cause diffusion like this."

Majors blinked. "That would mean—oh, no!"

"Negative matter," said Carroll promptly.

"Um. You postulate a negative mass in line with the light from a star?"

Carroll nodded.

Majors smiled and took out a roll of thirty-five millimeter film. He handed it to Carroll.

"I took the liberty of making smaller prints," he said. "Those are the other thirty-five pix made near that area. You'll see the initiation of the smudge on the second, and the completion of it on the twenty-eighth. The others are just spares."

Carroll looked at the smudges, one after the other.

"You'll note that the thirteenth, the twentieth, and the twenty-fifth have rather larger areas," said Majors. "Also, on the thirty-first—after the body presumably has passed out of line—there is one more faint flare-point. That was minutes after the thing passed out of line."

Carroll read the pictures carefully and then without a word he turned to the desk. He picked up the tape of Lawson Radiation recordings and handed it to Majors.

"Here," he said, "is correlation between

astronomical fact and the Lawson Radiation."

There were four definite pips on the line. Four spikes that reached up, with each spike labelled as to the time of reception. Though the intrinsic time did not match by hours the spacing between the pips and the flared photographs was perfect.

"Then what?" asked Majors, and Pollard held his breath.

"A mass of negative matter passing through space," said Carroll, "would naturally be struck occasionally by meteors or small celestial bodies."

"But if negative matter is repulsive instead of attractive?" objected Majors.

"Then," said Carroll simply, "the only masses that can strike the repulsive celestial negative-mass are those other masses that possess the velocity that corresponds to the velocity of escape in normal mass!"

Majors looked thoughtful.

"I get it," said Majors. "The velocity of escape is that velocity attained by any mass in falling to the earth from an infinite distance. Converted, any mass given that velocity upon the instant of departure need have no more acceleration applied in order that the mass be driven to an infinite distance against gravity. Follow?"

"Uh-huh," said Pollard.

"In the case of a repulsive mass—negative mass—in order for any other object to strike it it must possess enough energy to overcome the repulsion. This would be the inverted equivalent of the velocity of escape!"

"Negative mass and positive mass would cancel one another?"

Carroll nodded. "Producing the Lawson Radiation!"

"Then all these years we have been following a bit of negative mass getting hit by normal meteors."

Carroll shook his head. "You check the orbit of that mass," he said, "and you'll find out that it is due to strike Sol!"

"You know?"

"I suspect," said Carroll. "The aliens must destroy us lest we destroy them. This is their way. We must stop that mass!"

"Look," said Majors. "Let's find out the course of that celestial object first!"

"It will be," said Carroll.

"Carroll," objected Majors, "why must you insist upon blaming the aliens for something that is definitely a matter of celestial chance?"

"Because it is not celestial chance," snapped Carroll. "And I'll yet prove it!"

CHAPTER XI

Prophets of Doom

RITA GALLOWAY came at Pollard's request, and the doctor told her about the new developments. She listened with interest, finally nodded with comprehension.

"So that," she said, "is what drove him mad?"

Pollard smiled. "Obvious, isn't it?"

"Not too obvious to one who is not completely informed as to the workings of the mind."

Pollard smiled again. "Sorry," he said. "I thought it was simple. It may be me, but I will try to show you that the mechanics of the mind are as logical in madness as in sanity—or in plain cause-and-effect mechanical systems.

"Somehow during his researches in the Lawson Radiation he stumbled upon the truth. He studied it, not daring to believe at first the possibility of a negative mass. Yet the facts were there and in some manner Carroll managed to develop a system of physical mathematics that tended to prove his point.

"I have no doubt, Rita, that if we find any tampering with the Lawson Laboratory records, they will have been tampered with by Carroll himself, who refused to let this bizarre affair be known until he was certain.

"You see, Carroll knew the storm of protest that would arise if any physicist tried to promulgate such a theory without almost certain proof. So he concealed it. But he studied it thoroughly. And in his studies he discovered that this negative mass was heading for Terra."

Majors cleared his throat. "Tell me, Doctor Pollard, how you make these vast assumptions? Aren't you like the classical definition of a physicist? You know, a man of limited reason who can leap from an unfounded theory to a foregone conclusion?"

Pollard laughed. "Rita was not there. But you were. Did you note how quickly Carroll picked out the point? One look at the photographs, one look at the Lawson Record and one statement of fact—all tied in to absolute

perfection. Carroll knew that his theory was terribly thin—also he knew the futility of trying to stop a cosmic body approaching Terra. The combination drove him into hallucination."

"Amnesia?"

"Yes. It all ties in. Every bit."

"Go ahead and tie, Doc."

Pollard nodded. "His is a classic form of schizophrenia. For his years of study he is presented with the knowledge of certain destruction. This is terrible to face *per se*. It is terrible to think of one's self telling the world that he has just discovered the first true and provable link in the ending of the Solar System. It is like uttering the clarion of doom.

"Now remember," said Pollard, pointing off the pertinent spots on his fingers, "that Carroll probably tampered with the records or at least did not list the truth. Tampered with or falsified. That's point number one. Secondly, the true schizophrenic paranoid cannot rail against a mechanistic fate.

"He must find some sentience to fight, some evil mind to combat. For the paranoid feels that he can win in the end, which of course would be impossible against a case of mechanistic doom. Therefore Carroll needed some sentient manifestation of this doom, something that he could strike at, fight against. Therefore he has accused an 'alien culture' of tampering with the records to prevent us from knowing the truth.

"I tried to tell him of many others who claimed to have discovered a 'master-mind' that treated humans as we treat goldfish and guinea pigs. I tried to ask him why, if these master minds are so omnipotent that they can spend fifty thousand years watching an experiment in humanity, they were not smart enough to do away with the one man in that time that might cause them trouble. That's the link that stumbles most Prophets of Doom."

HE PAUSED.

"But James Forrest Carroll is completely self-justified. His explanation was simple enough to sound right. He merely claimed that, since his mind was sufficiently strong to best their 'hypnosis beams', they kept him alive to study him. You see? He is so mighty that they do not dare. True paranoia.

"Now, point three. Carroll is a brilliant man with a vast imagination. Yet his training as a physicist kept him from trying many wild schemes or things that might be against the teachings of modern physics. Therefore he attributes the many superscientific marvels to the techniques of the 'aliens'. In truth no Terran physicist would believe them possible. The conscious mind rejects the idea of the teleport for instance.

"But there was terrible compulsion. He must avert the destruction of Sol. This he can do, he believes, by learning much of the alien science and turning their own trick against them. Things that no sensible physicist would even consider must be given a try in this period of emergency. Therefore he went into hallucination in order to invent this 'science'—because his conscious mind tells him that it is impossible."

"Aren't you missing the motivation?" asked Majors.

"Not at all, I just stated it. His subconscious mind knew that the only way to stop this catastrophe was to try the products of an untrammelled imagination."

"Rather complex, don't you think?"

"Not to the mind. It is all self-justification. Remember the attack on Rita? Her ribs constricted by a heavy leather strap? A normal man with the impulse to kill doesn't go to such bizarre lengths. A shot, a stab, a bit of poison.

"Also," added the psychologist, "it is commentary on the mind of the paranoid that cruel and unusual forms of torture and death are uppermost. Since in Carroll's deluded mind this attack was to be used as proof of the alien culture, the crime must be made to look alien and unearthy.

"Well," said Pollard with a deep sigh, "We have smoked him out at last. We have uncovered the hidden truth in Carroll's mind. Rita, we need you again."

"I know," she said quietly.

"You forgive him?"

"Of course," she said. "And if I did not I should cover it. After all, this is no longer a matter of men and women and minor hates. This is Man against the Universe. And if I must sacrifiee myself to see that Sol remains I shall, and gladly."

"How about your brother?"

"He hates Carroll. Terribly."

Majors grunted. "We'll take care of him. Maybe he's the real madman in this scramble."

"At any rate," said Pollard, "we all have something tangible to fight, now. Go to him,

Rita. You have his confidence, even though he believes you to be one of the 'aliens'."

"Go to him?" she asked with a smile, "I'll not have to. Carroll will come to me."

"You seem certain."

"You may scoff at feminine intuition," she said with a laugh, "but in some cases it works. You see, no matter what Carroll thinks of me, he is aware of the fact that I am a woman. Meanwhile I'll merely borrow that portable teleport and wait."

THE room was dark save for a slight streak of yellow moonlight. As the night progressed, the streak of moonlight passed across the room, illuminating the sleeping girl, the dresser, the desk, the teleport, the blank wall.

And in the early morning hours the perfect plane of the teleport flashed briefly to admit James Forrest Carroll. Blinking, he looked around the darkened room until his eyes adapted themselves. Then he made his way to the side of the bed. The motion of the bed as he sat upon the edge awakened the girl, who sat up quietly enough to allay Carroll's fears that she would shriek.

"Rhine," he said softly.

"Yes," she replied.

"I need your help."

"I know. I'll give it."

"You will?" was his reply. The tone of his voice was indefinable. There was mingled wonder, and scorn, and suspicion.

"I will."

He laughed sardonically. "Now you'll help," he said. "Why didn't you help me when they accused me of trying to murder you?"

She shook her head sadly, and reached for his hand. He tried to withdraw but she held it fast.

"James," she said with a note of pleading in her voice, "Please believe me. I wanted to. But you see, my testimony was worthless. All I remember was a blow on the back of the head. Blinding lights, roaring sound and waves of pain that came and went in crescendo and diminuendo until I came to in Doctor Pollard's surgery."

"They blamed me."

"I know," she said.

"Perhaps you blamed me too." His hand tightened on hers as though he were silently praying for her denial.

Rhine lifted her other hand and put its palm against his cheek. "James," she said softly, "I did not see nor did I hear, but I know that whoever it was it was not the man who is here tonight."

He smiled quietly. "I keep forgetting the quality of mind that I am up against," he said.

"Mind?"

"Mind—or mentality," he said. "You see, Rhine, parallel evolution is impossible. So is the idea of brain transplantation. Hence the only way in which your race can invade ours is by mental replacement, invasion, control—or by wiping the other brain clean and clear and taking over. This leaves you an alien mind in a human body."

She laughed faintly. "I've often told you that you nor anybody else would ever get evidence to prove that I am not a very human person," she said softly. Her hand upon his cheek moved slightly and then slid around to the back of his head. She drew it forward and met his lips with hers.

For but a brief instant he resisted. Then he yielded as her lips parted beneath his invitingly. His arms went around her and he cradled her close to him and he knew with sweet completeness that, alien mind or not, there was no question nor doubt about her responding to him.

Minutes later she leaned back in his arms and chuckled at him. He grunted a wordless demand to explain.

"Why," she said, still chuckling, "you'd have a terrible time explaining to any one of a hundred billion human beings that I am utterly alien and that this friendship of ours is strictly platonic and developed out of a desire for mutual desire for protection against our respective races."

Carroll looked around. The streak of moonlight had moved. It was now casting a pale golden light on an easy chair. Draped across the easy chair back was a pale green negligee almost as intangible and diaphanous as the moonlight. Carroll blushed and remembered where he was—and also why he had come.

"Rhine," he said. "You'll come with me?"

"Of course," she told him.

His suspicion returned vaguely. "Tell me," he pleaded, "Is it because you know that there is no return for you or—"

"Sol is menaced," she replied simply. "Sol must be saved and you are the only man in the world that can do it. I want Sol saved."

"But why?" he demanded.

"Because," she replied.

Carroll shook his head. Question and answer were pat. Human, alien, animal, vegetable or mineral—the same question and the same answer!

Rhine chuckled again. "Beat it," she said. "But leave the teleport running. I'll be through as soon as I'm dressed."

He nodded, arose and went through the teleport. Rhinegallis followed him in about ten minutes and once more they were in the laboratory of Carroll's Wisconsin home.

CHAPTER XII

Negative Matter

FOR an instant their gaze held.

"Now," asked Carroll, "what is the Lawson Radiation?"

"Should I know?" she queried by way of reply.

"I think so."

"Why?"

"As an emissary, you should."

She laughed. "I'm still giving no evidence, James. I cannot. I am human."

He looked down at her, and the recollection of her kiss was strong. "There are times," he said ruminatively, "when you most certainly are!"

She let her eyes drop. Then she raised them again. "I know very little about it," she told him. "And practically nothing but what you've told me. A lot about alien mathematics and sciences. I think that somewhere in the maze of data there will be the answer you seek."

"And that," he replied, "may be either a chance statement based upon good prediction or the remark of an alien who knows where the body is hidden but will say nothing more than, 'Getting warmer'."

"So what do we do?" she asked. "Shall we let this simmer down to the old unanswerable argument as to my mental status or shall we forget that and take to real investigation?"

"Investigation," he said. "You're a darned good librarian, Rhine. You tabulate and I'll try to juggle it out."

Rhine went to the draftman's table and sat down.

"I've maintained all along that the Lawson Radiation was the by-product of faster-than-light travel," he said. "Ignoring the argument of aliens and such, we have good evidence at present. There is a body of negative mass approaching Terra. This negative mass is approaching Terra at a velocity not only exceeding the velocity of light but traveling several hundred times the velocity of light."

He paused. Then he sat down—hard.

"What's the matter?" she asked, seeing the look of consternation on his face.

"The photographs," he said bleakly.

"Yes?"

"Can a rifle bullet traveling faster than sound be heard before it arrives?" he asked enigmatically.

"No."

"Then a body traveling faster than light cannot be seen before it arrives! Those pictures show a region of the sky and a few stellar catastrophes that took place years ago when the light left there unless—"

"Unless what?"

"Unless the telescope made of the teleport mirror effect utilizes a type of radiation that propagates faster than light."

Rhine nodded. "If celestial bodies can travel faster than light," she said, "it stands to reason that some form of energy can travel faster than light also. After all, matter is one form of energy."

Carroll smiled quietly. "This is negative matter," he said. "And so far as I have been able to calculate, the only thing that can avoid the Einstein increase in mass with increase in energy would be some object having negative mass. But negative mass is as meaningless a term as negative energy."

"A gentleman by the name of Dirac got the Nobel Prize for postulating states of negative kinetic energy," said Rhine.

"The positron," nodded Carroll.

"Then it must make sense."

"It does. A normal body possessing energy tends to dissipate that energy by transferring the excess to other bodies possessing less than it does. A body possessing negative energy would demand that energy be applied to it in order for it to acquire a state of energy equilibrium.

"The positron, according to Dirac, is a state of negative kinetic energy which is satisfied only when the energy of an electron is applied to it. In the process known as 'pair-production', where hard gamma strikes matter and releases an electron and a positron, it is actually a case of separating the electron from its positron, leaving in effect

a 'hole' in the level of energy.

"It is a man whose bills are not paid but are merely covered by written and certified checks. Send away one check and you have a debit in the man's account. The positron is satisfied very quickly, however, since there is a large excess of free electrons to fall into place.

"These cancel the positron—and that process produces hard gamma rays again—of the same energy content as required to cause the 'pair production' in the first place. About one million electron volts plus," he added.

She hesitated a moment.

"Now—about this negative mass," she said.

"Simple," he said. "Very simple. A negative mass is the only thing that can exceed the speed of light. Similarly negative energy is the only kind that can propagate in excess of light. So now let's juggle equations until we can reproduce the same."

Rhine nodded, picked up a pencil and then looked at him expectantly.

"Put down," he said with a smile, "the first equation that ever told the truth about the relationship between mass and energy. Energy 'E' equals Mass 'M' times the squared speed of light, 'C^2'."

"And from there?"

"And from there we start juggling until we find out how to introduce the negative factor. And I do not mean by dividing by the square root of minus one," he told her.

DOCTOR POLLARD looked up at the man who stood before his desk. "Mr. Galloway," he said, "You may believe yourself normally right but you are ethically wrong."

"Morals and ethics be hanged!" snarled Rhine's brother. "That nut has kidnaped my sister again."

"Not without her aid," smiled Pollard.

"Aid be hanged too!" shouted Kingston Galloway. "He tried to kill her once and he may try again."

"Look," said Pollard quietly. "There are times when personality and identity mean nothing. I think well of my life, as much as you think of yours. Yet I'd feel less than human if I permitted myself and my ideas to stand in the way of civilization."

"Stop talking like a superior being and come down to facts," yelled Kingston Galloway.

"I am. James Forrest Carroll is the only man on earth who can save Terra from certain destruction. Your sister can be of help to him."

"How?" demanded Kingston.

"Rita is an excellent librarian. She has the ability to recall facts and figures beyond most people. She has almost an eidetic memory. Whether Carroll is sane or completely schizophrenic-paranoid, his statements and his theories are solid when based upon his own line of reason.

"That his line of reason does not agree with heretofore known physical facts is of no consequence since several of the unsound, unscientific, un-factual reasonings have produced things that work. Unsound as they may seem, they are not unreasonable—excepting to us who can not reason that way."

"Get to the point."

"Whether Carroll urges Rita to display a horde of facts because he thinks they come from an alien mind in a human body, or whether he understands the truth—that they are merely repeats of his own statements made when he does not recall them—the fact remains that Rita is his tabulator, his encyclopedia of fact, his memory. She and she alone can put down concurrently things he has reasoned out, once when himself and next when he is—un-sane."

"But she's in danger!"

"So are we all," replied Pollard easily. "And Rita herself knows the danger. And," he added with a snort of derision, "of what good is your so-called moral integrity going to do you a year from today if James Forrest Carroll is stopped from preventing the calamity due to erase Sol from existence in a month?"

"He's a madman. How can you believe that this danger really exists?"

"The danger is what drove him mad."

"And made him believe that Rita and I are aliens?"

"Merely manifestations of the hallucination."

Kingston Galloway growled in his throat. "I ought to kill you," he snarled. "Not only have you left my sister unprotected, but you've condoned her kidnaping and now you sit there and tell me that the fate of the world lies in the mind of a lunatic."

Pollard smiled. "There have been many historic times when civilization was nearly torn down by a madman. Let history record once when civilization was saved by one."

"At my sister's expense!" Kingston stormed, barely able to control his rage.

POLLARD shook his head. Then he said patiently, "James Forrest Carroll was driven mad by this knowledge of inescapable doom, because his subconscious mind knew that the answer was hidden in the realm of physics termed 'unreasonable' to the true physicist.

"Once James Forrest Carroll has succeeded in removing this menace he will know that amnesia and mental retreat are not necessary for the preservation of his sanity. There will undoubtedly be evidences, too, to support the 'unreasonable' physics in terms of what we know to be true. Thus Carroll will be completely self-justified and will be returned to normal."

"You talk a lot about self-justification," snarled Kingston.

"Everybody is self-justified," said Pollard. "Sanity is when the self-justification of the individual is, within certain limits, similar to the self-justification of the average human being. Insanity is when the self-justification of the individual lies outside of reasonable limits. Once Carroll's self-justification—which is one more way of saying his 'viewpoint'—is reasonably similar to others, sanity will return."

"And in the meantime, what about Rita?"

"Rita is at worst a good soldier," said Pollard. "At best, she alone will realize the full truth. But just remember neither morals nor ethics mean a thing to a civilization that has just perished before a nova. And I have more than a little respect for the morals and ethics of both Carroll and your sister under any circumstances."

"But she's my sister and he's—"

"Shut up. You're talking like a fool. They're doing nothing wrong. Stop them and you'll destroy the earth. Perhaps if you'd left him alone—them alone—Carroll might not have identified you with his hallucinatory aliens."

"Yeah? And just what is an alien?" demanded Kingston.

"An alien," smiled Pollard, "is any man who does not think as you do!"

"Bah!" cried Kingston, turning on his heel. He left the office swearing eternal vengeance.

An hour later, Majors came bursting into Pollard's office. "Pollard!" he exclaimed. "Listen! That wildman Kingston Galloway has just collected a gang of his cohorts, friends and buddies and they've all taken off like wildmen. They're heading for Wisconsin!"

"The stupid idiot!" exploded Pollard, coming out of his chair. "Come on!"

* * * * *

RHINEGALLIS clasped Carroll's arm tightly as she stood beside him and looked at the almost-vibrant blackness that seemed to shimmer in the encircling wire mounted on the wall. Carroll was too busy to pay attention to her clasp.

He was busy adjusting knobs on a haywire equipment on the bench beside him. The shimmering blackness flared briefly at one side, turned milky for an instant near the top—and then a pinprick of utter—nothingness—appeared to one side of the circle.

Carroll adjusted knobs, brought the spot of sheer black into the center of the artificial plate and then expanded it. It was noticeable only because it—as a circle of utter no-response—was less energetic than the misty background.

"That," he said, "is it."

"The negative mass?"

He nodded. "Is the 'fence' ready?"

"Checked."

"Now's as good a time as any," he said laconically. He left the vantage-point and went to another panel in the laboratory and began to throw switches.

Five miles from Carroll's home a ten mile circle of wire came to life. Set on insulators mounted on trees in a rough circle, the area ten miles in diameter shimmered with a thin, misty film of energy—the same energy as that of the teleport.

It thickened as Carroll adjusted the driving gear, thickened and became more positive until it was as shiningly opaque as the teleport screen-mirror. Trees in the circle, cut clean at the surface of the mirror fell, impelled by gravity into the screen. Then above the perfect plane of energy was nothing.

The trimmed trees fell helter skelter into a deep gorge from a smaller teleport plane twenty miles to the north.

Then the perfect plane bowed downward into a shallow paraboloid of revolution. As it went down the up-thrusting trees were trimmed off and the matter in them converted into energy. A minute but perfect sphere appeared atop a pillar of energy not far from the rim of the paraboloid.

Down went the center of the paraboloid, down into the bowels of the earth, and the sphere of stored energy grew rapidly. Down went the center, deep, until a perfect parabolic reflector ten miles in diameter and twelve miles deep resulted. The cubic mile after cubic mile of earth, rock, water, and forest were stored as energy in the sphere, now a full three feet in diameter.

A landslide started near the rim, and earth rumbled forward down the side of the depression, disappearing as it touched the outside of the energy-shell that was Carroll's reflector. The rim of trees that supported the energizing ring fell into the widening inverted funnel but its job was over. The mirror was stable, held by the energy contained in the perfect sphere on the column near its edge.

The rumbling stopped as stability came. The roar, all of it sheer physical sound from tortured earth, died and left a hollow vacancy in comparison.

Then Carroll took a small set of levers and manipulated them like a man flying a drone airplane. The sphere of energy left the column and was driven over the gaping maw of the mighty reflector. Down it dropped until it was at the exact focus of the paraboloid. There it compressed to almost a point.

"This," said Carroll, "is it!"

He reached for the master switch just as a flashing bolt of coruscating energy dazzled across the room, searing his arm.

"King!" screamed Rhinegallis. "Don't!"

CHAPTER XIII

Last Chance

THROUGH the door swarmed Kingallis and four of his henchmen. They paused to get their bearing and then they plunged forward, shouting. Rhine made ineffective gestures against them—pure instinct, for her senses were shocked by their abrupt appearance.

Carroll cursed. His sense of timing told him that there was no second to waste, yet his right arm hung useless and he was reeling weakly from the shock. They did not fire again as they came swarming across the floor, but their interception of his move was as effective. Kingallis, with an angry shout, caught Carroll and hurled him away from the panel.

Two of the others took Rhine by the arms and drew her back out of the way.

"Now!" snarled Kingallis, with sheer animal tones in his voice. "We'll see about this!"

He waved the other two aside and back and then stepped forward to slap Carroll across the face. The blow, meant as an insult strong enough to arouse fighting instinct, was strong enough to stagger Carroll.

"Weakling," scoffed Kingallis. He backhanded the staggering physicist again and again, driving Carroll against the far wall of the laboratory.

"Come on and fight," sneered Kingallis.

Rhine shrieked in mad anger. "Fight?" she shrilled, "after you've shot him?"

Kingallis kicked Carroll in the abdomen. "Coward!" screamed Rhinegallis. With a superhuman strength born of sheer madness, Rhine hurled herself out of the hands of her captors and raced across the floor. Her fingernails came down across her brother's face drawing a torrent of blood from torn eyelids. At the same time she kneed him in the stomach. Her blow was more effective than Kingallis's had been on Carroll. He stumbled back writhing in pain.

But only for a moment—he straightened and cursed blackly, stepped forward and slapped Rhine across the face, hurling her back into the hands of the others by the force of the blow. Then he turned quickly for Carroll had recovered.

But instead of going to Rhine's rescue Carroll turned and raced madly across the floor. He hurled his good shoulder against the master switch, driving it home.

Relays slapped home—

And light itself was tortured. The very walls of the laboratory seemed to shake and waver because of the mighty electrostatic stresses set up in the continuum of space. The square, precision-machined equipment warped into non-mechanical distortions.

Vastnesses of energy flowed in a mad vortex. Steep gradients of electrostatic charge flowed back and forth like the surface of a stormy sea, and corona discharge hissed and trickled out of all sharp corners.

The nerves tingled and muscles twitched; normal senses produced abnormal stimuli. In one man's hand one of the weapons discharged into the floor and he tried to hurl it from him with a cry of pain. He could not open his clenched hand.

Twitching with every erratic reversal of the charged field that surrounded the area, James Forrest Carroll painfully pulled himself to his feet and looked across the shimmering room. Pride and self-confidence added to his will-power. He stood there as his tingling brain considered the facts of the matter.

Regardless of what happened now—regardless of himself or of anybody—he had won this battle. He laughed and in the tortured continuum of the place his laugh sounded like a mad cackle.

Fear was painfully slow in coming to the faces of Kingallis and his cohorts. Then it came—fear and the realization of danger. King gave an angry, wordless cry and tried to cross the laboratory floor. He could not quite make it.

CARROLL turned his back on them and watched the viewplate on the far wall. It was wavering and distorted but it showed the sky and the sphere of negative mass.

Out in the parabolic reflector, the tiny compressed sphere of energy disappeared into a hole of blackness, from which expanded an exploding shell of sheer light-energy. Against the reflector it poured in a howling torrent and into the sky it went—and disappeared.

Faster than the light it created it went, on and out into space. Gone—unseen—undetectable—save for the black circle on the wall of Carroll's laboratory.

There it was evident as a column, a cylinder that blazed like the fury it was. How long it lasted is beyond guesswork. Its duration was several seconds in the making, its velocity the speed of light multiplied by an unknown quantity that registered in the thousands.

It was—the Lawson Radiation—the Lawson Radiation multiplied and increased as the light from the sun is greater than the pale ineffective illumination coming from a Will O' the Wisp.

It only took seconds, while the continuum heaved and strained to regain its equilibrium and the sensitive nervous systems of those in the laboratory tingled and screamed to the dictates of flowing energy. Seconds only it took for that flying column of energy to reach the black circle that was the negative mass that menaced Terra.

Yes, seconds only, it took. The negative mass that menaced Sol could not have been far away.

Then cylinder and sphere met in a singular lack of display. The cylinder, narrow but shining, bored into the sphere, dark and menacing. Perceptibly, the sphere slowed, dragged, came to a halt—then accelerated in the reverse direction.

In milliseconds the celestial body of negative mass had been stopped and re-started on its return trip. It accelerated swiftly, the acceleration-factor itself rising as the energy from the column became the energy of motion of the negative mass.

A negative mass—similar to a negative energy-level—demands energy before it can be stable. Its demands were satisfied and then satiated. It raced into unthinkable velocities before the column of energy was all used up and still the column poured into the negative mass.

It could not have been accomplished against a positive mass but the negative mass possessed negative inertia. The harder it was driven, the less energy it took to drive it harder.

Across space it went, becoming a pinpoint in Carroll's artificial viewplate. The stars of the galaxy behind it shone brightly—all but the one directly in line with the flight of the negative mass.

Then, as the spacial stresses diminished and a man could think again in that area, there was a tiny flash on the viewplate.

And James Forrest Carroll laughed. "Finis" he roared.

King shook himself. "You madman! You destroying fiend—get him!"

The laboratory echoed and re-echoed with the wild thunder of released energy. Rhine dropped beside Carroll. Her right hand flicked up to a switch on the panel, and out of thin air there appeared a tenuous inverted bowl of light. Flying bits of metal as well as the bursts of released energy deflected from the inverted bowl.

Painfully, Carroll stood up and advanced across the floor towards Kingallis and his cohorts. He walked through a veritable tornado of sheer death, and Rhinegallis followed him because to get outside of his protecting shield was to die.

They looked at him as they would have viewed a specter, for he advanced through their hail of death unharmed. In fright they herded back, their weapons lowered helplessly.

Cornered and helpless against the teleport

they waited, shivering in fright.

"You said once," snarled Carroll, "that the universe was not large enough for your kind and mine. As I have destroyed your world so I'll destroy you!"

He lunged forward, and they turned and rushed madly into the teleport. Carroll shook his head.

"They—?" asked Rhine, shakily.

"The spacial stress is still present," he quavered. "They were teleported into the nearest and strongest field." He turned and stumbled across the floor to the controls and shut off the gigantic reflector. The rumblings started as a final landslide tumbled down the declivity into the bowl. The screams of King and his cohorts were lost in the thunder of avalanche.

JAMES FORREST CARROLL sat in the easy chair in Pollard's office and smiled tolerantly at the psychologist.

"Sure, sure," he said easily. "All in my mind."

Pollard grunted. "Well, it is."

"Baloney. I suppose Kingallis didn't come to prevent me from destroying his world?"

"He came—"

"Knowing," said Carroll, "that if he stopped me he and his kind could go on with their mad plan for conquest. May I ask about this?" he held up his injured arm.

"When I last saw Kingston Galloway—" started Majors.

"You call him Kingston Galloway," laughed Carroll. "But I know he is Kingallis. Now go ahead."

"He and his bunch were carrying pistols."

"He shot at me with some sort of energy weapon. This is a burn, not a bullet-hole!"

Majors shook his head. "Not a chance. Admitting that what you sent out was an energy-beam, it is still impossible to believe that a hand-sized energy weapon is practical."

"Granted," said Carroll. "But then there's this evidence. Explain this, will you? I don't mind getting my arm burned badly if it will only make you believe."

Doctor Pollard shook his head with a smile. "Stigmata," he said. "The 'Bleeding Madonna' who exhibits wounds and bleeding from hands, feet, sides and forehead on Good Friday. A sheer mental phenomenon—psychosomatica. This is the same. You are so convinced as to the positiveness of these aliens that your mind produced this burn as evidence."

"Brother, this ain't no mental mirage," snapped Carroll.

"No one said it was. But the power of the human mind is such that the cellular structure of the body will exhibit burn-trauma when the mind believes it so. So one of them creased your arm and you reacted as though it were the burn your mind believed it to be.

"We've been through all this before. It's just cause and effect and result. This time it is only the latter that counts. You've destroyed the menace that drove you insane."

"Look," said Carroll, "I've been through it."

"And nothing you've turned up with can be construed as any evidence beyond the manufacture of your own mind. And nothing that you will ever find—"

CARROLL nodded angrily. "I've got a couple of projects yet. One is the hand-held weapon—just to prove to the bright boys who think this bum wing is thought-up—that such is possible. The other may bring proof, but it may take some time.

"I've still got me a job. I'm going to develop the faster-than-light space drive and go out looking for aliens. They had interstellar travel. They all couldn't have been destroyed."

"Forget it, Carroll."

"Forget it?" exploded the physicist. "Forget it when I've a whole world of physics waiting for me to develop? Not on your life!"

He stood up and grinned at them boyishly. Then he left and as the door closed Majors looked askance at Pollard.

Pollard smiled. "He'll forget it," he said. "The aliens will become dimmer and dimmer in his memory until they are gone. But right now we have a fairly stable James Forrest Carroll on our hands. And, Majors, the final therapy is out there waiting for him. Fine girl."

"Rhine," said Carroll softly as the door closed behind him. "Rhine."

"I'm—waiting," she replied. "But why not call me Rita. Everybody else does."

"I know," he said, looking at her pointedly. "But I'm amused, sort of."

"Why?"

"Because the one thing that permitted you to gain access to our research was the

thing that licked your pals."

"And?" she asked, puzzled.

"People too often try to divorce the mind from the body," he told her. "It can't be done."

"I don't follow."

"Infants are all brought into this world alike from a mental standpoint. Yet within a few short months each is a separate identity with a different personality, no matter how similar the environment and heredity. This is because the mind of man is but the accumulated result of what his sensory channels bring it.

"An alien you were once, Rhine. But from the instant that you took over that very nice Terran body your mind began to receive information and experiences through the sensory channels of a Terran body.

"Every item, every experience, brought to your mind through Terran channels forced your mind to interpret it in terms of Terran nervous stimuli. Therefore, from the second instant after taking over, you began to change subtly to the Terran.

"Go on—tell me the rest," she said with a smile.

"Day by day, week by week, you will become more and more Terran. Eventually, your alien experiences will fade and you will be as one of us and no longer alien."

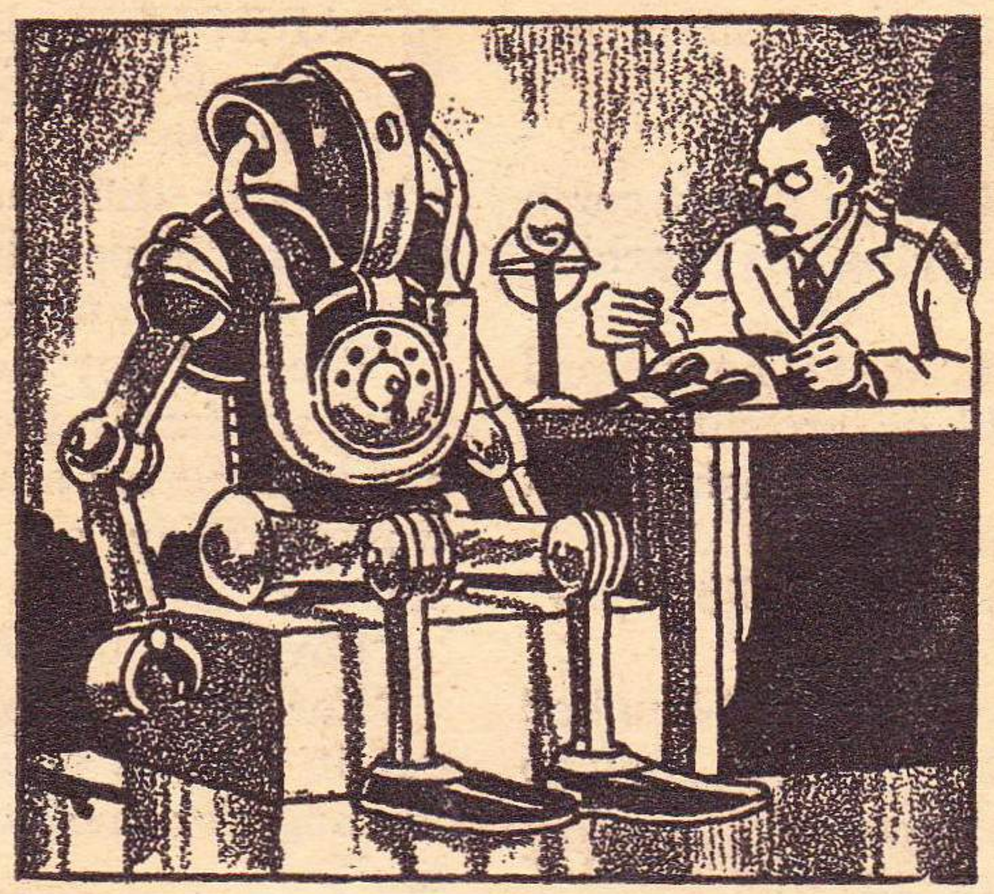
"You know," she said shyly, "someday I intend to present you with a little alien."

"That'll be interesting," he chuckled. "You are becoming more and more Terran even now."

"But not," she said with absolute finality, "until we have paid a visit to the clergy!"

"See what I mean?"

She laughed—very humanlike.



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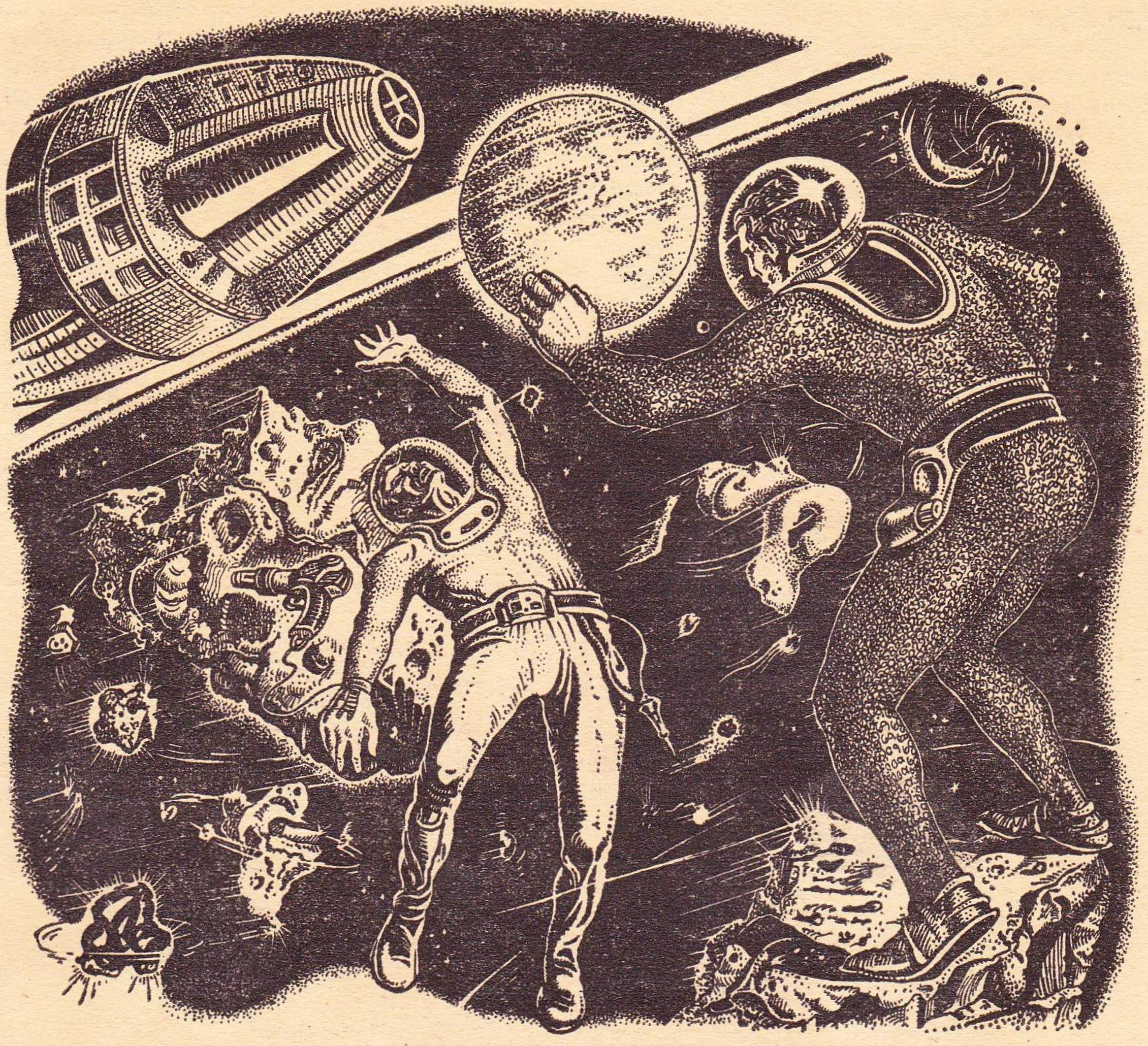


Larsoe laughed as he gave the slighter man a shove

THE RING BONANZA

By OTTO BINDER

Honest prospectors like Timkin may some day comb relics from Saturn's rings, but will there be rats like Larsoe?

THE rings of Saturn stretched like a level sheet in all directions, though actually composed of millions of tiny bodies. Homer Timkin carefully braked with the nose rockets till he floated motionlessly with respect to the ring's own rotary motion around its primary. Then he eagerly donned his vac-suit.

Had he struck it rich this time? Through his binoculars, a moment ago, he had seen the glint of one small jagged lump among the ring debris—and it had glinted like gold or silver. There was vast treasure among the rings, if one could find it. . . .

In his vac-suit he used his reaction pistol to propel him down toward the glinting mass.

In his eagerness, he almost failed to see the other ring body which now hurtled up, pursuing its own independent orbit within the grander sweep of the rings.

Timkin braked with his reaction pistol only in time to let the marauder lumber past, scraping his foot. He let out his breath with a hiss. That had been close. Many a ring prospector never returned to the Titan docks, because of some such accident as this, creeping up on you unawares.

More than prospecting in earth's out-of-the-way spots had ever been it was a hazardous occupation among Saturn's rings. But it had its enticing rewards and lures. Some prospectors returned with a load of precious metals or uncut virgin diamonds that made them rich for life.

Timkin reached the glinting body he had previously spied. It was irregular in shape, some five feet in its greatest diameter. And it had a yellow tinge in the soft light shed by huge Saturn over his shoulder. Timkin permitted himself wild hope as he chipped off a piece with his belt pick. He held the chip up to his glassine visor, squinting at the grain.

His face fell slack.

"Fool's gold!" he muttered, flinging the piece away in a small fury.

It was just pyrites, worth a few cents a pound in the market and not worth the hauling. Timkin sat down on the miniature worldlet and cursed all the gods of luck and ill luck. He had been out a month now, and no bonanza. Of course, it had been so for the past ten years. Each year the old prospector hoped for his big find, and each year he only eked out a precarious living, picking up odd bits from the rings.

He looked with bleary eye over the plane of the rings, stretching vastly in all directions. Timkin was not young any more. His lean spare body could not stand the rigors of space much longer. His leathery, seamed face showed the strain of countless near-escapes from death. If he didn't strike it rich this trip he'd have to retire—poor. He'd be one of those derelicts, haunting the Titan docks and mooching meals.

He shuddered.

Hopelessly, he watched the endless parade of the rings. By far the most of their expanse was just worthless rock. Then he saw a jet black lump not far off. It was coal. Timkin grinned mirthlessly.

Coal had been used as an industrial fuel and chemical storehouse some 200 years ago. Today it was no more than a curiosity in museums. That was his luck—spotting things in the rings that would barely pay the expenses of his trip.

As he sat he also saw a whitish mass further along—fossil bones. And nearby, a dully shining angular object, probably a bit of machinery.

Sighing, Timkin got up. "Got to make expenses," he muttered. "Might as well collect those odds and ends."

His reaction pistol took him to the lump of coal. It was four feet in diameter but in weightless space it was no strain for Timkin to push it toward his ship and stow it through the back lock into the hold.

Then he went back for the space-bleached bones. Theory had it that there had once been a moon of Saturn within two-and-a-half diameters of the giant planet. Gravitational stresses had then exploded the moon into countless fragments, which took up the same orbit after spreading out and thus came to be the unique rings.

SEEMINGLY, there had once been life, and civilization, on the destroyed moon. Fossil bones, once buried within the moon's crust, now floated within the ring debris—and bits of machinery of some vanished and unknown race. There was no oxygen or moisture in space to rust them and thus the metal remained perfectly preserved through eons of time.

Timkin looked musingly at the bones, as he shoved them to his ship. They made up part of the skeleton of an ancient creature that possibly resembled an earthly tiger. The Saturn Archeological Museum would pay five SS-dollars for this—Solar System Dollars, the standard currency. Not too bad.

Finally, Timkin got the bit of machinery. It consisted of a broken portion of a huge cogged wheel with dangling wires and bits of other enigmatic mechanical devices. Timkin wondered just how advanced the people had been who once inhabited the first moon. That was something even the experts didn't know with the few poor clues they had collected.

For a moment, Timkin's imagination wandered. He pictured life on the first moon, before the debacle. Towering cities—humming wheels—busy, industrious people. Then, abruptly, their world cracking apart, into a billion bits. And now only this re-

mained . . . the rings of Saturn.

As Timkin brought the broken wheel to his ship he took one last look around and saw another museum item. It had circled in slow gyrations and come into view from the back of his ship. Timkin got that too, perhaps the most intriguing find of the lot, for it was a stone with mysterious "writing" on it. The museum had quite a collection of such stones, evidently parts of temples or buildings.

Seemingly the people of the first moon had inscribed most of their stone walls with their writings. But these writings had never been translated. They were a riddle that baffled the best archeological minds of the System.

He also put this carved stone in the hold.

"Huh," he grunted. "I'm just a scavenger for the museum, that's what I am."

Timkin looked over the things crammed in his hold, gleaned from the rings for a month. Their total value would possibly pay for the trip with a few SS-dollars to spare. Yet one find of gold or precious stone and he would dump the whole mess out and be far the richer.

Growling to himself, Timkin took off his vac-suit and went to the controls. He debated. He still had food and fuel enough for three days before he had to return to the Titan docks. What should he do?

"I'm going to the Crêpe Ring," he finally told himself. "I had no luck in Rings A and B, so why not try C just to play it out to the finish?"

Timkin had started, a month ago, at the outer ring—Ring A. This portion of the rings had an outer diameter of 171,000 miles and extended inward toward Saturn for 11,100 miles.

Then there was a separation of 2,200 miles between rings A and B named Cassini's Division when first seen through earthly telescopes centuries ago.

Ring B was 145,000 miles, outer diameter, and some 18,000 miles wide. Another space of 1000 miles and then came Ring C or the Crêpe Ring, 11,000 miles wide. So had the rings of Saturn distributed themselves, under the laws of gravitation, when the first moon exploded ages before. The first moon had not been large, for the total mass of all the rings was estimated at no more than one-quarter of earth's moon.

Timkin urged his old rattletrap *Jetabout* up from the plane of the rings till he had a clear path before him and then jetted straight toward mighty Saturn, which hung in the sky like a bloated, vari-colored marble.

He crossed the narrow empty space between Rings B and C and finally cruised over the outer edges of the Crêpe Ring. Saturn was only 17,000 miles distant and Timkin could feel the faint tug of its powerful gravitation.

"Now," Timkin said between set teeth, "let's see if I have any luck. I've got three days to nose around through the Crêpe Ring, searching. I know there's gold or diamonds ahead . . . if I can just stumble on them."

AS HE slowly cruised above the Crêpe Ring, with his binoculars to his eyes, Timkin munched a sandwich and now and then took a swig of coffee. In all their explorations of other worlds earthmen had never found any beverage better than time-honored coffee, though the Martians tried hard to sell a green-tinted product called *tukka*.

Timkin's hand gave a little jerk, and his binoculars wavered. Watching him one would have thought he had spied something exciting—like gold. But it was something else, almost equally as startling. . . .

"Another *Jetabout!*" Timkin murmured. "Gave me a start, seeing it so suddenly."

It was a rare event when two wandering *Jetabouts* happened to cross paths in the vast area of the rin[illegible]-almost like two explorers in the heart of Africa meeting each other. Timkin grinned humorlessly.

"Another chump!" he thought. "He wouldn't have a bonanza, or he'd be streaking back for Titan. He's cruising and looking for something like me."

Timkin flashed his heliograph, reflecting the light of Saturn, at the other ship. An answering greeting flashed back. Timkin watched it as it kept going on its course and slowly faded into distance. He felt less lonely for a moment.

Timkin went back to his scanning of the ring bodies with his glasses. He saw another lump of coal but was too wearied at the thought of donning his vac-suit for it, and let it go by under him. It was not till a minute later that he snapped to attention. For now he remembered, belatedly, that he had also seen a yellow glow near the black coal.

"Day-dreaming, that's what I was!" he [illegible]d, hastily braking and spinning the *Jetabout* around. "If that was gold, and I don't

find it again, I'll. . . ."

It was not easy to backtrack in the rings, and find a certain spot you had passed over. The rings were constantly in motion, in their orbit around Saturn. And each body in the rings had its own private motion in respect to the others. Some gyrated fantastically around others.

A huge body might in turn exert enough gravitation of its own to hold smaller bodies in its grip, and force them to become its "moons." And these satellites then perturbed nearby bodies, causing them to weave and shuttle within the ring.

In short, any body in the ring might shift position enough in the space of a minute or two to be lost forever.

Timkin shot back to the coal lump. Yes, the coal lump was there, not having a complicated private motion. But where was the yellow lump that his blind eyes had seen —and ignored? There were a hundred other little bodies around the coal lump and to look them all over one by one. . . .

Timkin's heart sank to its lowest ebb before suddenly he saw the yellow glint again. Then, thankfully, he shot the *Jetabout* over it and hovered, locking the controls. Minutes later in his vac-suit he was propelling himself down to the yellow lump via reaction pistol.

"It's only fool's gold, of course," he told himself to calm his wildly racing pulse. "Just think of it as fool's gold, so you won't be disappointed again. Or it could be cheap copper. So don't get excited—yet."

Timkin reached the yellow body, fumbled with his pick and finally chipped off a piece. He noticed it sheared off under the hard pick, rather than chipped. He dared to hope it was soft gold. And when he held the bit to his visor. . . .

"Gold!"

He said the one word quietly. Then he sat down on the lump, shaken.

"Gold," he repeated. "I hit it—gold! My bonanza! My dream for ten years!"

It was minutes before he could control his shaking nerves and allow the warm glow of exultation to spread through him like wine, giving him new strength. He arose and, like a bird, made a circle around the lump, using his reaction pistol. He estimated its weight as a thousand pounds, earth measure. Then he stopped to stand on it again, a king on an island.

"Of course, it ain't pure gold," Timkin told himself. "But it looks like about fifty percent pure. They say the first moon before it exploded didn't have many seas to dissolve and thin out ore deposits. So I can figure about five hundred pounds of gold. At the pegged rate of thirty-seven SS-dollars an ounce. . . ."

Timkin's head was too light and buzzy to reach the total.

"But I'm rich," he exulted. "Filthy rich. Gold is even more valuable today than it used to be on earth in the old days."

TIMKIN was right. Contrary to all fanciful and unfounded predictions, gold had never lost its value. True, the nations of earth had all gone off the gold-standard in the 20th century and for a while gold was a forgotten metal, buried in vaults.

But then it came into its own as one of the most non-corrodable metals. When space travel came into being, an alloy of gold became the standard coating for all equipment used on other worlds, some of which had noxious atmospheres that could rust iron or copper in days to worthless dust.

But gold in its alloy-hardened form defied the worst other worlds had to offer. Thereupon gold became a metal of commerce and its value rose even higher than its one-time value as a money standard.

And so, with his find of gold, Homer Timkin was as suddenly wealthy as any Spanish explorer of the New World, back in earth's past.

"It's sure going to be a pleasure," crowed Timkin, "to drag this lump of gold back to Titan!"

"Yeh, it is—for *me!*"

Timkin jumped at the sound of the voice behind him, coming out of nowhere. He turned, gaping, to see another man in a vac-suit slowly approaching, with a reaction pistol. Timkin could see the newcomer's *Jetabout* now, parked alongside his own. Timkin had been too engrossed in his find to see the approach of the ship.

"Huck Larsoe!" said Timkin in recognition for he knew all the other prospectors back at the Titan docks.

"Yeh, Timkin," returned Huck Larsoe, grinning. "I was the *Jetabout* that passed you a while ago. Just before you went out of my sight, I saw your ship suddenly scoot on a backtrack. That spelled a find to me! So I turned and came back, and followed you up."

Timkin didn't like it. Huck Larsoe was a

younger man and filled out his vac-suit with a powerful, hulking body. His stubble of unshaven black beard formed an unkempt fringe to the hard-bitten face that peered out of the visor. There was something in his cold grey eyes that froze Timkin. There was such a thing as claim-jumping here in the lawless territory of the rings.

"You sure struck it rich," Huck Larsoe went on. "But maybe you didn't hear me before. I said it was lucky—for *me!*"

"Y-you can't take this from me," Timkin began, his voice tinny as it came out of the chin-transmitter to impinge on the radio vibrators at Larsoe's ears. "It's mine! I found it!"

"Sure, you found it," agreed Larsoe. "But I'm taking it away from you, see?"

"No!" shrilled Timkin. "That's plain robbery—piracy! I'll tell the police back at Titan."

Larsoe leered. "And what witnesses have you got? You and me are the only two humans around here for 50,000 miles. It'll be your word against mine back at Titan. If I say I found it myself and you're trying to cut in on it they'll have to believe me. Because *I'll* have the gold."

Timkin had no weapon. The reaction "pistol" was not a weapon at all, merely a device for moving in space by means of short, harmless rocket blasts. He struggled against the bigger man. Larsoe laughed as he gave the slighter man a shove that sent him spinning off the lump and almost into another ring body with jagged edges.

Then, still laughing, Huck Larsoe shoved the mass of gold to his own ship, his reaction pistol streaming red flame behind him. He turned his mocking face.

"I ain't even going to kill you, Timkin, like I could. No need going to the trouble. It's still your word against mine, back at Titan. You ain't got a ghost of a chance to *prove* this is your find."

Slowly Timkin rocketed back to his own ship. He watched Larsoe stow the gold in his hold and cast out a mess of fossil bones, lumps of coal, bits of machinery and pieces of carved stone.

"Here, Timkin," Larsoe chortled. "You can have this other junk of mine now. It'll help you pay for your trip, anyways. See? I ain't such a bad guy at heart."

And with a mocking laugh, Larsoe slipped into his cabin lock. A moment later his ship rocketed away and was lost in black space, leaving a broken old man behind.

Timkin floated beside his ship for long bitter minutes without the energy to do anything. Ten years of searching and hope wasted—ten years of hardship and toil. Fate had at last rewarded him with a magnificent bonanza—and then had kicked him in the teeth.

Timkin was on the verge of madness. For a moment he thought of opening his reaction pistol wide, gunning straight for the ring bodies and seeking peace and eternal rest there.

BUT then, shudderingly, he brought himself back to sanity. The will to live triumphed as it did in all living creatures in the universe. He looked at the stuff which Larsoe had cast from his ship, which was slowly drifting away, scattering.

Rousing himself, Timkin began collecting it and stowing it in his hold. No need to let the stuff go, even if it was a mocking gift from the hated thief. He still had to make a profit on the trip.

Timkin held one carved stone in his hand for a moment, staring at its ancient writings. It was a triangular piece and seemed to have two sets of writing on it. To keep his mind from plunging into black despair Timkin tried to picture again the ancient civilizaton of the first moon.

But a slight huddled figure sobbed aloud at the controls as the *Jetabout* left the rings and aimed for Titan.

At the Titan docks two days later Homer Timkin was calm and resigned. There was nothing he could do. No use to put in a complaint against Huck Larsoe, to the police. As Larsoe had said, it was one man's word against another's. With no witnesses the legal battle could only end with Larsoe the winner.

Sighing, Timkin hired a rocket truck and piled the museum stuff aboard and drove to the center of Titan City. Here the Saturn Archeological Museum reared, stately and imposing on its marble pillars.

Timkin drove to the service entrance and rang the bell. An elderly man answered and flashed a smile of greeting.

"Well, Timkin again," he said. "Back with another load of relics from the rings? I take it you didn't hit any bonanza then, eh?"

"Well, I—" Timkin stopped. No need to go into his story, and broadcast his shame and misery to the universe. "No, Professor Blick.

No bonanza. But I've got a load of stuff for you to look over for your museum."

Professor Blick, adjusting his thick glasses, came out and looked over each item as Timkin took it off the truck.

"Our prices are still standard, Timkin," he said. "Two SS-dollars for a specimen of coal. Three for fossil bones. Five for bits of machinery. And ten for the carved stones."

"Why," asked Timkin curiously, "do you pay more for the stones than anything?"

"Because if they could speak they would tell us far more about the ancient civilization of the first moon, than any of the other items. We have a sizeable collection now. We can't translate the writing yet. But some day we're going to find the Rosetta Stone that will give us the clue and open up the whole vast story."

"Rosetta Stone?" Timkin was puzzled.

The professor went on conversationally.

"Yes. You see, back on earth many centuries ago, the archeologists of that time also found carved writings—the ancient records of the Egyptians. And they too were a riddle.

"But one day a stone was found with not only Egyptian heiroglyphics on it but *another language!* The text on this stone had been written in Egyptian and then copied in the other language. And that second language—ancient Greek—was *known!* So this enabled all the Egyptian writing to be translated and. . . ."

The professor's voice stopped, with a queer gurgle. Timkin stared. He had just handed him the triangular stone which had been among Larsoe's "gifts."

"Timkin!" screeched the professor. "This is *it!* This stone has *two* sets of writing on it. One is the unknown script of the first moon. And the other is—oh, thank the stars!—it's early Rhean, *which is a language we know!"*

It was all rather confusing for Timkin after that. The professor bawled at the top of his voice and more men came rushing out. They all fell to talking as if the greatest event in the history of the universe had taken place. Timkin hovered on the outskirts of the group, forgotten for the time being.

But then all the men turned to him. They looked at him as if he were some king or some awesome potentate from another star.

"And there, gentlemen!" said Professor Blick, waving at him, "is the man who brought the stone back!"

Timkin was in an agony of embarrassment as one by one the archeologists came up and shook his hand silently with reverent respect in their eyes.

"Professor," pleaded Timkin when this ordeal was over. "I—I want to get away. Just pay me for the stone, and let me go. If it's so important to you, maybe you could up the price a little, eh? Maybe—uh—a hundred dollars?"

Timkin was amazed at his own audacity.

THE professor looked at him queerly, almost pityingly, and said slowly, "One hundred dollars? Timkin, you don't realize the value of this stone. The museum will make you out a check for *one hundred thousand SS-dollars!"*

Timkin stood stunned, unbelieving.

The professor smiled.

"Yes, that's what I said—one hundred thousand. If we could afford it, we'd pay you ten times that. Actually, you see, the stone is *priceless.* The check will be sent to you. You can go now, Timkin."

Timkin drove the rocket truck back, in a dream, and passed a red light. The traffic cop wrote a ticket.

"That'll cost you twenty-five dollars, bud," he growled.

Timkin burst out laughing and kept laughing all the way back to the garage. He was fined 25 dollars. It would have been an economic tragedy before. Now it was a joke. He could pay a hundred fines like that and still laugh.

The next day, when the check arrived at his room, Timkin knew it was not a dream. The amount was 150,000 dollars. They had even upped the price voluntarily.

Timkin went out, with the check in his pocket, and headed for the *Spaceman's Nook.* He had one more piece of unfinished business to do. He knew he would find Huck Larsoe there and saw him at a corner table. Strangely he seemed depressed, not at all like a man who had just brought in a fortune in gold.

"Hello, Huck!"

Larsoe looked up sourly as Timkin sat down cheerfully.

"Listen, punk, you got nothing on me," he growled.

"I know," said Timkin. "But why so glum? What did you get for my—pardon me, *your* —gold bonanza when you cashed it in?"

Larsoe smashed his fist down on the table, spilling his drink.

"Don't talk to me about that blasted bonanza!" he roared. "You know what it was?

It was just plain rock with a film of rich gold ore over it. A fake! A flop! I just got enough out of it to pay expenses and that's all."

"Too bad," Timkin grinned, feeling his cup running over.

"Oh, don't go gloating," said Larsoe. "I still put one over on you. I took the thing away from you, didn't I?"

"Sure," agreed Timkin. "But you gave me something back which was worth—"

At this moment, Larsoe sat up, as something came over the tavern radio, working through the hum. An announcer was saying. . . .

"—biggest news of the day! The Saturn Museum has just announced the find of a carved stone, from the rings, which will allow them to translate all the hitherto unknown writings of the first moon! And in honor of the man who brought it back from the rings, they have named it—the *Timkin Stone!*"

Timkin was shocked himself. His name would reverberate down through the ages now, attached to a stone as famed as the Rosetta Stone of earth!

But the effect on Huck Larsoe was like that of a knife in his heart. He turned slow, stunned eyes to his companion.

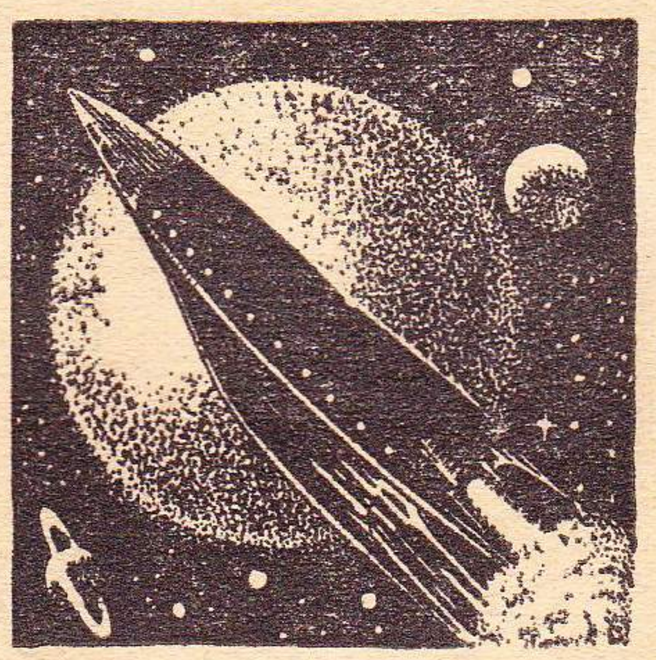
"Th-the Timkin Stone?" he mumbled. "What—"

Timkin drew the check out of his pocket and showed it to Larsoe.

"Yes, I brought it in. Look, they payed me one hundred and fifty thousand dollars for it. And Huck—I hope you have a strong heart—Huck, that stone was among the stuff *you* gave me after stealing my bonanza!"

"Then I made the find!" yelled Larsoe. "It's *me* they should name the stone after. And you've got to turn over that money to me, Timkin! It's mine! I found the stone and. . . ."

Timkin looked him straight in the eye and said quietly, "Any witnesses, Huck?"



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THE LIFE DETOUR

By DAVID H. KELLER

Henry Cecil thought he was benefiting his fellows when he was ordered to install a new type of water for them—but his fiancée awoke to what the rulers really had in mind!

"THANKS!"

"No need of thanking me," insisted Primus. "There is only one reason for your being invited to come over the bridge, and that is your own ability. The Upperons are always ready to advance any of the Otherons who show ability to add to the welfare of our city. Our promotion experts have had you in mind for some time.

"Your work in Electrochemistry has more than excited our admiration—in fact we are slightly envious of your ability to do things that most of us can only imagine in our dreams. Here is your permit to cross the Bridge and stay across. Congratulations! I believe that still greater honors are in store for you."

The young scientist looked out of the window. He was on the upper story of a tall building erected on the top of a mountain. Far below him, across a chasm, was the other part of the city, the home of the Otherons. Connecting the two sections was a Bridge, hung like a spider's thread, glistening in the sunlight, beautifully clean, as all the city was.

It was the Bridge.

Every Otheron child was taught that perhaps some day he might cross that bridge. Every Otheron mother hoped that her son would be found worthy of such an honor. Now and then some one did—not often, but frequently enough to keep hope alive in the hearts of the workers.

Slowly through the decades, each filled with more advancement than past centuries, cities like Victorus had developed. Slowly there had come a cleavage between the workers and the rulers, the voters and the politicians, those who made wealth and those who saved it.

Increase in knowledge had brought freedom from disease, machinery had liberated muscles and abundant leisure had given opportunity for interesting hours of study and happy hours of play. The city was clean, all lives being relatively luxurious. But in spite of everything the Bridge had been built, first as a symbol, then as a concrete idea, at last as a shining, shimmering reality.

The slaves and nobles, the workers and the merchants, the voters and the politicians had slowly, by a process of social evolution, changed into the Upperons and the Otherons. There was not much difference between their physiological existences, but their spiritual lives held nothing in common. The only bond between them was the Bridge.

Henry Cecil walked back across the Bridge. It was the law that when the Otherons were called to Primus they had to walk. The young inventor, living in the shadow of the Bridge all his life, had not been on it till that day. Till then it had been only a thing of beauty, rainbowed across the sky.

He had dreamed of crossing it. He had even daydreamed of the time when he would become an Upperon. Now he was actually

EDITOR'S NOTE

SCIENTIFICTION HALL OF FAME STORY

SOME stories are forgotten almost as soon as they are printed. Others stand the test of time.

Because "The Life Detour," by David H. Keller, M.D., has stood this test, it has been nominated for SCIENTIFICTION'S HALL OF FAME and is reprinted here.

In each issue we will honor one of the most outstanding fantasy classics of all time as selected by our readers.

We hope in this way to bring a new permanence to the science fiction gems of yesterday and to perform a real service to the science fiction devotees of today and tomorrow.

Nominate your own favorites! Send a letter or postcard to The Editor, STARTLING STORIES, 10 East 40th St., New York 16, N. Y. All suggestions are more than welcome!

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Henry Cecil drew a picture and handed it to the old man

on it, going back home, back to his family, back to the girl who had inspired him upward in his electrical researches.

He was happy. It was not only a rainbow with a pot of gold at the other end but he had crossed and found the treasure. Now he was going back to tell how the almost impossible had become reality.

From the office window Primus watched the boy, just a speck moving along the top of the Bridge. Primus was smiling. He had reason to smile. Something that he had been waiting for a long time had happened. Not having the intelligence to force the answer, he had to wait till someone else found it for him.

Once found, he had imagination enough to use the information. It was information that had made him Primus, in fact, it was just that psychological quality, the ability to keep one jump ahead, to see what was going to come before it did come, that enabled the Upperons to become what they were.

HE PUSHED a few buttons, calling the Decimals into his office. These ten, with Primus at their head, ruled Victorus. Up to the present time the wisdom of their rule was shown by the fact that they were still rulers. Otherwise they could not have survived.

"The time has come!" he said briefly, with a smile. They all knew what he meant. It had been their dream for years, not often spoken of, rarely discussed, yet never far from their consciousness. Now, with opportunity in his grasp, the instrument in his hands, Primus felt that there was no longer need of hesitant speech or delayed action.

"Modern machinery has so simplified the mechanics of life," he began, "that there is no longer any real need for the Otherons in

the future social structure. Yet there they are. We have looked after their every need, safeguarded their health, provided for them so amply that they have simply survived.

"Contraception might have served our purpose, but we did not provide for the survival of the maternal instinct. The old-fashioned ideas concerning love and family, home and children, survived rather, much as the old ideas of magic and religion. Thus we had the unique experience of seeing a part of life live on when it really had survived its usefulness.

"Unfortunately for us, the moral code was so much a part of our personality that no one could consider wholesale murder for a moment, deliberate race destruction. I am sure that none of you would entertain such an idea for a second. Yet there was always the danger that some one of them would tire of a life of perfect social servitude and long for one of imperfect social freedom, if you understand what I mean.

"Can you imagine the thought of all the Otherons wanting to cross the Bridge at the same time? So far, they have had the intelligence to do so if they wanted to but none of them have had the imagination to see what would happen if they did. The thought has at times caused me insomnia. Now I have the solution. The time has come for action!"

"What is the method?" asked one of the Decimals.

"Very simple," was the quiet answer. "All the luxuries, all the necessities, clothing, food, entertainment, even the conditioned air used in the twenty-four-hour day of the Otherons, come indirectly from us. As humanitarians, as philanthropists, we want to see them well cared for. We have allowed them to benefit from every new invention, every scientific attainment. I intend to do just this—once more."

"Do you mean that you are going to be kind to them?" asked a Decimal.

"Exactly. I am going to give them a better form of water to drink—heavy water. Since you are not real scientists, that will have to be explained to you. Today I issued a permit to Henry Cecil, a brilliant Otheron, to cross the Bridge. He will meet with us tomorrow and tell us all about it.

"This wonderful young man has intelligence but no imagination—so he has not the slightest idea as to what it is all about. That will be all for today. You can spend the next day trying to imagine what life will really mean to us if our problem is solved."

"I suppose there is no other way," whispered a Decimal. "Still there are nearly one hundred thousand of them, and some of them seem interesting personalities."

"But they are not Upperons!" retorted Primus sharply.

"No, I admit that—just Otherons."

"They have ceased to fight," cried Primus. "They have become contented. All contented life has to die. And remember this. Some day the decision has to be reached. Either we die or they do. Victorus is not large enough for both of us. The Bridge is not strong enough to save us if they develop imagination."

"It looks strong to me," answered a Decimal, "but I suppose if they all had the same idea at the same time anything might happen."

"To us!" cried Primus, finishing the sentence. "Tomorrow at two we will meet here with Henry Cecil and listen to his lecture on his new discovery."

THE young inventor was warmly greeted by Primus and the Decimals. They welcomed him as a new Upperon. One Decimal patted him on the back. Another prophesied that some day he would be found worthy to become a Decimal.

The young man knew his history. He thought that his present position was almost equal to that of an old-time United States Senator—when there was a United States and Senators.

Everybody was seated comfortably. They even made the young inventor occupy a chair.

"Now tell us all about it, professor," said Primus, jovially. "Put it in simple language, something that can be understood by the sixteen-year old mind. You see we are not highly educated as you Otherons are."

"There is not much to say," replied the inventor. He really looked like a boy in comparison to the eleven hard-faced business men who faced him. "Water, as you all know is simply two parts of hydrogen and one part of oxygen. One day some of us found that there was a hydrogen of double atomic weight and we called that substance Deuterium.

"It combined with oxygen just as the light hydrogen did and produced water, only it was heavy water. If we use D for the symbol of the new hydrogen, then the formula for the new water would be D_2O instead of H_2O. Still water, you understand, but different.

"Naturally, we wanted to find if this new water existed in nature or was only a laboratory novelty. We found that in every five thousand gallons of ordinary water one gallon could be separated of the heavy water. When water was taken from different places, the proportion was different.

"Sea water from the depths, half a mile

under the surface, contained much more than rain water. Of course, we could make it in the laboratory, but it was expensive—about six thousand dollars to produce one pint. We even found that there was a water containing three parts of hydrogen. There was one gallon of that to every billion gallons of water.

"After the work was finished I sent in the usual report and almost forgot about it till the order came to find some method of manufacturing it in large amounts. It was a little intricate, but I was finally able to tear some Deuterium into two parts.

"One part I used as a target and the other, converted into duetons, served as bullets to fire at the target. That speeded the process up, increased the amount of heavy water and lowered the cost. I have a machine in mind that can be attached to the water plant of Victorus so that all the water can be converted into heavy water as it flows into the distributing pipes."

"That is fine!" commented Primus. "And who are the 'we' you speak of as doing all this work?"

Cecil laughed.

"As a matter of fact," he replied almost bashfully, "I did most of the work myself. There are very few men in our laboratory that have cared to bother much with these higher types of electro-chemical study."

"Just as I thought. You are the one who deserves all the credit and I am glad that you were recognized as being worthy to pass over the Bridge. Now what will this heavy water do if a person drinks it all the time?"

"I don't know. I have been so busy working out the scientific side of its manufacture on a large scale that I never thought of its use. I suppose it is just like any other water, but much— I know what it will do! It has powerful germicidal properties."

"Fine! Wonderful! The very thing!" almost shouted Primus. "A water that is a powerful germicide, circulating through every part of the body, destroying germs of every kind, killing all new growths, a panacea that will prolong life. You will go down in history as one of the great benefactors to mankind.

"You go back to the water works and build your apparatus so that the water can be changed. For the time being only use it on the supply going to the Otherons. They are our special responsibility. The welfare of Victorus depends on their welfare.

"For the time being, we Upperons will drink the old-fashioned water. Now, is there anything we can do for you? Any special favor you want to ask?"

The young man blushed as he almost whispered his answer.

"Indeed there is. You see, I am in love. Wonderful young woman. Perhaps you gentlemen know what it is to be in love? If I cross the Bridge and leave her on the other side it will be the end of everything. I cannot do my best work, thinking she is unhappy. I wonder if you could let her cross the Bridge? Then we could both be Upperons, happy Upperons."

Primus smiled. "We will think it over. In spite of our age, the Decimals and I were once young. The idea is unusual but it may be arranged, my boy, it may be arranged. Now hurry back and give the Otherons their supply of heavy water as soon as you can. And we will be seeing you soon."

They waited till he had left the room, kept silent till they saw him hasten across the Bridge, waited till he vanished, a little speck on the other side.

Then they started to laugh—just hearty, masculine laughter.

"A perfect fool!" cried Primus between his gales of merriment. "He thinks that the world is his oyster and all he has to do is to open it."

SUDDENLY one of the Decimals stopped laughing. He looked almost sober.

"What would happen if he found out your intentions, Primus?" he asked.

"He won't!" sneered Primus, laughing on. "He hasn't enough imagination."

Henry Cecil began to work in earnest. He worked all day and part of the night but found time to see a little of Ruth Fanning, the young woman he wanted some day to take over the Bridge with him.

Instead of love he talked to her about his work. Instead of kissing her, he drew pictures of his new machinery on the tablecloth. Finally she did not know whether he was in love with her or heavy water. But that did not stop his enthusiasm for his laboratory or his love for her. He even brought her a four-ounce bottle of his new product.

"Look at it, Ruth," he said. "Just a little there but do you know what it means to us? Suppose you try to imagine a lot of it, a river of it, and on that river will float a little boat on and on till we finally live with the Upperons. It is not a Bridge that will take us there, my dear, but a stream of my heavy water."

"I am not sure that we will be happier as Upperons," she sighed.

"Nonsense! Why, everybody is happier when they are Upperons."

"Why are they so anxious to change the water they give us?"

"So that we shall be healthier, live longer. It is an ideal medicine, almost a panacea. You ought to see it kill germs in a test tube."

"Are they going to drink it?"

"Certainly, but Primus told me to give the first supply to the Otherons. There is a grand man, Ruth; I want you to meet him. You know, he is really a human being. We Otherons have had a wrong idea about him and the Decimals. They are doing everything they can to make life pleasant and sweet for everyone in Victorus.

"I must be going. I will be over tomorrow evening. In about one week the rush will be over and then we can talk about that boat trip—you know—symbolic trip on the stream of heavy water. We will amount to something when we are Upperons."

Ruth Fanning smiled a little sadly as she watched him leave the house. She wondered if the Upperon ladies played good contract bridge and just how they dressed. She had never been over the Bridge.

A week later Primus and the Decimals visited the water works of Victorus in company with Henry Cecil. The inventor explained everything to them. The machinery to make heavy water in large amounts was complete. All that was necessary was to start it by pressing a button.

Primus thought that there should be some public ceremony in which Cecil could be thanked for his contribution to the health of the city. Cecil begged to be excused. It was finally decided that nothing should be said.

The inventor on a certain day should press the button and keep still. Proper recognition would come in time. He was to press the button and then marry and go on an extended honeymoon, after which he and his bride were to cross the Bridge and stay across.

Back in the private office of Primus one of the Decimals took him to one side and asked, "What will Cecil do when he comes back at the end of the month and finds out what has happened to the Otherons?"

"I imagine that he will kill himself," was the smooth reply. "If he fails to do it something else will happen to him. I will think it over."

Ruth Fanning had two kittens. That was one of the atavistic traits of the Otherons—they remained fond of pets. She also had imagination. That was something that was not suspected. Hardly any of the Otherons possessed this peculiar psychological trait. It was almost unknown. Generation after generation had led such perfect mechanical lives that the idea of looking forward to see what might happen rarely occurred to them.

Ruth Fanning had two kittens, imagination and four ounces of heavy water. As soon as Henry Cecil left she began to combine the three things. She took one kitten and placed it in a cage in her bedroom and she took the other kitten and placed it in another cage in her bedroom.

She treated both kittens alike but three times a day she mixed with the milk one kitten received a teaspoonful of heavy water. The first dose was given when the family was away from home. It was a good thing. The kitten was certainly a happy little thing. It jumped, played, turned somersaults and had the best time a kitten could possibly have.

It had energy enough for ten kittens, and it made a lot of enthusiastic, melodious noises. Ruth had never seen a kitten act that way. Even the other kitten was astonished at the unusual feline conduct. Ruth made notes on a tablet. She was more than interested. But she did not tell Henry Cecil.

Five days later he told her the final details of his plan. The machinery was finished. The room it was in was locked and sealed. Everything was automatic and would run for one month without human interference or supervision.

Two days later he would press the button, lock and seal the room, marry her and they would go to Asia for twenty-eight days of pleasure. On their return they would become really, truly, Upperons for the rest of their lives. Primus was going to pay all the expenses for the month.

It was then that Ruth said, "Do you remember my two kittens?"

"Yes, I do seem to remember that you had two, but I have not been seeing them lately."

"I have them in cages up in my room. Come up and look at them."

IN ONE cage Cecil saw a kitten, just a little, playful kitten, but rather unhappy and lonely and not enjoying the confinement. In the other cage was a cat, and old cat, that looked as though she had lost eight of her nine lives.

"I thought you said you had two kittens, Ruth?" he asked.

"I had, five days ago, but something has happened to one of them. Here are my notes. The poor thing has aged ten years in five days."

The inventor sat down and read the notes. He read the entries made three times a day; he looked at the cats. Then he read Ruth's notes all over again. Suddenly he jumped up and shouted,

"Well, I'll be—"

"Don't swear, Henry," pleaded Ruth. "That will not help any. Just try to think what it means. Use your imagination."

"It is too late. What a fool I was! Decimals patting me on the back and telling me what a great mind I had. Primus offering to

pay for our wedding trip and urging me not to hurry back, suggesting that I have the door to the machine-room locked and sealed and take the key with me. Do you know what they intended to do to the Otherons?"

"What happened to the cat?"

"They cannot do this to me!" cried the enraged man. "Make a fool and a murderer out of me! I am going across the Bridge and tell them a thing or two."

"No. You will do nothing of the kind. You would never come back. Go on with your plans, only change something or other, so they will be disappointed."

He banged his fist on the cage so hard that the senile cat jumped.

"I have it!" he shouted. "Everything will go through just as it has been arranged for. We will even have our trip. Just you go on sewing and leave it to me, Ruth—leave—it—to—me."

"I knew you would be able to think of something. You are a real inventor, Henry."

"I'll say I am," he replied, kissing her, then dashing out of the room.

Two days later Henry Cecil and Ruth Fanning walked across the Bridge. They went directly to see Primus. He was waiting for them, alone.

"I have come to report, sir," said the inventor, "that all of your orders have been carried out. The machinery to make heavy water has been started, the room locked and sealed. I have the only key and am taking it with me. Now if there is nothing more, we will be married and start for Asia. And thank you very much for your kindness to both of us, sir."

The great man fairly beamed his happiness as he folded his effusive benevolence around them like a cloud with a golden lining.

"You have deserved all we have done for you and your beautiful bride, my dear boy," he said. "And one thing more—one of the Decimals is thinking of retiring from public life. You are being spoken of as being a proper person to take his place. How does that suit you? Mrs. Cecil will be in her proper place then.

"Lots of the Upperon ladies will be glad to entertain her. She is Upperon class, my boy—I can see that at once. Call on our treasurer for funds and do not stint yourself. I want you to have a wonderful time. Good-bye and good luck to you."

They left him after expressing their thanks.

"A wonderful man. He certainly has imagination," whispered Ruth.

"Not quite as much as you have," answered Henry, also in a whisper, "but I think that we had better start for Asia just as fast as we can."

Thirty days later they returned to Victorus and went at once to Ruth's home. Her parents welcomed her.

"Anything new?" she asked. "You certainly look well."

Mrs. Fanning insisted that she had never felt better. Mr. Fanning said that there was no special news except that the Upperons were somewhat quiet and keeping to themselves, but that the Otherons were taking care of their part of the city with their usual efficiency.

No one had crossed the Bridge—so there was no news. One of Ruth's cats was dead but the other was growing nicely.

The young people looked at each other.

The next morning the young inventor suggested to his bride that they take a walk. She was ready for a little exercise but was somewhat surprised when she found where she was going.

"I have to go," he insisted, "and you have to go with me. I never like to start any experiment without finishing it. I suppose it is my scientific complex. I not only want to know what has happened to the Upperons—I *must* know. It may be dangerous but I doubt it. Somebody has to go and who else should it be but the two of us?"

They reached the Bridge and walked without a pause till they reached the center. There, poised over the chasm, they stopped and leaned over the guard rail. It was a beautiful spring morning. Far below, a mountain stream complained of its having to keep on dashing aimlessly to the sea. Just above them a robin had built a nest in the heavy wires. Around them was silence, thick, intangible, peculiar.

"It is so still here," whispered the woman.

"It is always still but today it is oppressive," replied her husband.

THEY went into the city of the Upperons. No one was on the streets. No one seemed to be in the magnificent castle, the upper floor of which served as an office for Primus. No one answered the push button calling for the elevator.

"We shall have to walk," at last explained Cecil. "I know where the steps are because I ran down them once. I was so anxious to see you and tell you that I had my pass and was going to be an Upperon that I could not wait for the elevator. Come on. It is only twenty-five stories."

No one was in the waiting room, no one in the inside office and then—at his desk sat Primus.

"He was an old man—in fact, a very old man. Everything was old about him except his eyes. They had the hatred of youth in their venomous gleam.

"So you have come back, Cecil?" he asked.

"I knew you would."

"Yes, sir," answered the inventor. "You see, the vacation was over, so I had to come back and go to work again. I am reporting for duty and there seemed to be no one to report to but you, sir."

"I was waiting for you," whispered the shaking senile sullenly. "I knew you would come. I was waiting for you. The others all died but I kept on living on bottled grape-juice and crackers, waiting till you came back. If you had stayed, you would have laughed as loudly as the rest.

"It was a madhouse for the first few days. Every Upperon was laughing. They were as happy as human beings could be. They were so happy that they could not be serious and find out what they were happy about. Upperons who had never laughed were splitting their sides over nothing at all.

"For a little while I tried to give orders, tried to make them stop drinking the water after I had suspected what you had done—but they thought it a great joke. Laughing water, that is what they called it. They stopped their alcoholics and got a better kick out of the water.

"And then they went back to their houses and lost interest and grew old and died. Think of it! Every Upperon died of old age in a month, all except me, and I guess I am done for. What did you do to us, Cecil? You didn't have time to do much. My experts inspected the machinery just before you started it. It was all right then."

"What did you intend doing to the Otherons, Primus?"

"Whatever it was it was not to happen to us. Did the Otherons die as we did?"

"Oh! No indeed," answered the woman. "You see, they kept on drinking plain water."

"It was this way, Primus," explained Henry Cecil and there was a certain sympathy in his voice. "Ruth had imagination and she put that and four ounces of heavy water and two kittens to work and then we saw what your idea was. You must have thought you could get along without the Otherons.

"I had to keep quiet. If I had told my friends they would have become excited and might have tried to cross the Bridge, and then someone would have been hurt, maybe killed. And I did not want to be killed myself just when Ruth was expecting me to marry her.

"But I had to do something. Under the water works, in the basement, there are two twelve-inch water pipes, one furnishing the water to one side of the Bridge and the second to the other side. Of course, as soon as the heavy water machinery was turned on it would supply the pipe leading to the Otherons' homes.

"I went down there and put on a double detour. I crossed the pipes. Then, after I started the heavy water machinery, the new water started to supply the Upperons. Of course, I was not sure what it would do to you but I knew what it did to Ruth's cat."

He paused long enough to draw a picture.

The old man took the picture and held it close to his near-sighted eyes so he could see it better.

"We were wiped out by a detour," he sighed. He tried to sit up in his chair. "What are you going to do now? With the Decimals and the Primus dead, what are you going to do? Who is going to run Victorus?"

"It seems to be doing pretty well without you," answered the woman. "After all, you were only great and powerful because none of the Otherons had imagination to see you for what you really were—or that none of the Upperons were really necessary to the life and welfare of the real city. Henry and I will go back and if there is a need for leadership, I think my husband and I have enough imagination to take charge of things. They may some day call him Primus."

But the old man had died in his chair.

Back they went down the stairs, through the city of the dead and out on the Bridge. Ruth took a visiting card and stuck it under a robin's nest. On it she had written:

NO THOROUGHFARE
CLOSED FOR REPAIRS

"And now I guess I will have to get a new job," sighed the inventor.

"You have one," answered Ruth. "You are going to be the first mayor of Victorus and I am glad it all happened as it did. I do not believe I should have liked living with those Upperon ladies. I bet they played rotten bridge."

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NEXT ISSUE'S HALL OF FAME CLASSIC

THE CIRCLE OF ZERO

By

STANLEY G. WEINBAUM

OPERATION ASDEVLANT

By LT. COMDR. WARREN GUTHRIE, USNR

In a future war, the greatest menace we may have to combat is likely to be the highly scientific undersea raiders of the foe!

EDITOR'S NOTE: Lieutenant Commander Guthrie is one man who knows whereof he speaks—both in the matter of submarines and aerial missiles. Born in Syracuse, Nebraska, in 1911, he took an A.B. at Nebraska Wesleyan, an M.A. at the University of Michigan and won his Ph.D. at Northwestern. Since 1934 he has been a member of the faculty of Western Reserve.

During the war, Commander Guthrie attended the Air Combat Intelligence School, studied anti-submarine technique aboard the U.S.S. Santee, served as assistant to the Tactical Officer, Anti-Submarine Development Detachment, Atlantic Fleet and was Air Combat Intelligence Officer aboard the big carrier, U.S.S. Bonhomme Richard.

So when Commander Guthrie paints us a picture of the turns a third world war could well take, he is not talking wildly. We believe that this quiet and scholarly discussion of possible future warfare has a real place in a magazine dedicated to science fiction.

IT'S a moonless night along the coast of industrial New England. Giant radar stations sweep the sky. An attack by enemy buzz bombs packed with atomic catastrophe is expected. It's known that country X is about to move and America wants no second Pearl Harbor in World War III.

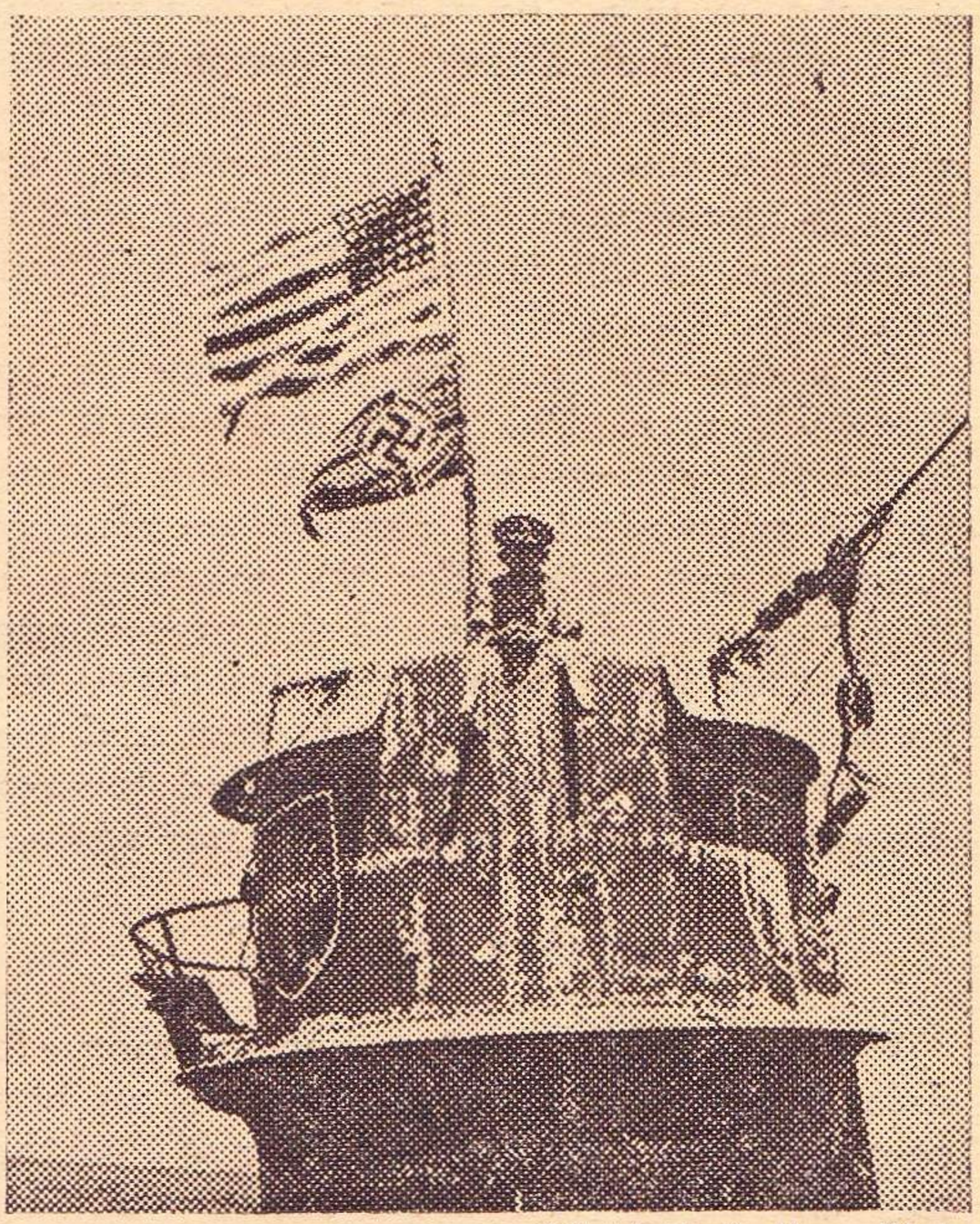
Far north, across the wastes of the Arctic, fly our defensive patrols, set to intercept possible long range missiles. But, even as the whole defensive system swings into protective action; the dark water breaks smoothly over radar-camouflaged domes of enemy submarines coming up for a final survey before the attack.

At H-hour minus 5 minutes, the sleek, black hulls break water off New York, off Boston, Block Island, Cape May, Norfolk and Charleston.

Allowances are made for wind and air density, launching rails are adjusted and the enemy bombs are underway on their short range, low-level flight to the industrial and population heart of America. With all forces alerted to air attack, the telling blow that might win the war for the enemy has come, as in World Wars I and II, from under the sea.

Fantastic? No. Listen to the testimony of Admiral Jonas Ingram, Commander in Chief, Atlantic Fleet:

"It is definitely possible for New York to be attacked by enemy buzz bombs launched



Official U. S. Navy Photos

The Stars and Stripes fly above the Swastika on the first submarine captured intact by the U. S. Navy

from submarines. Near the end of the European War we were forced to alert New York against such an attack."

And, remember, Admiral Ingram was talking about yesterday's submarine—for even a beaten and battered Germany was ready with a new and vastly improved U-boat

The Story of Anti-Submarine Warfare!

when the Army finally ended the long battle of the Atlantic and the victorious Allies marched into Berlin.

Listen to Captain A. B. Vosseller, Commander of the Anti-submarine Development Detachment of the Atlantic Fleet during the grim days of the Battle of the Atlantic:

"The most dangerous offensive weapon of the next war may well be a bomb launching submarine."

Civilians Warn Us, Too

Want civilian confirmation? Here is the word of Dr. Charles Squires, long time member of the Navy's famed Anti-submarine Warfare Operational Research Group. "German buzz-bomb attacks on New York were planned for 1945," he says. "In the next war, if it comes, such attacks appear inevitable."

There, then, is the sober judgment of men who know the facts about submarine warfare. In planning our defense against possible aggression in the future, let's not sell anti-submarine forces short.

How can we lick the submarine in tomorrow's war? The Navy believes it has found the answer—and that answer is continued experiment and research on counter-weapons and tactics. For the submarine, in two wars, has driven us to the ragged edge of disaster when postwar complacency saw us assume that the fight was won and that the submarine was an outmoded weapon. We cannot afford to chance disaster again.

Have We Forgotten?

With our traditionally short memory for defeats we want to forget—most of us have completely forgotten—those days of 1942 that saw the Axis sink ships faster than our wartime yards could build them. Then the glow of burning ships was seldom absent from our east coast. Our beaches from Atlantic City to Miami were black with the scum of fuel oil desperately needed for the decisive battles in Europe and Africa.

Iron crosses came easily to U-boat captains in those days. The climax arose in May and June when more than 260 ships were sunk by German submarines while anti-submarine forces all over the world could claim only 14 U-boats destroyed.

A valiant England, battered but victorious in the air, was on the verge of defeat because, while the air battles got the headlines, submarines were getting the ships and supplies without which Britain could not survive.

U-Boats Grow Bold

And the British were unable to retaliate, for the U-boats, driven from Channel waters, were ranging arrogantly up and down our own East coast—often in clear view of the shore. The convoy system had won the anti-submarine war in 1917—we had assumed it would win in 1942. But a defeated Germany had improved both her tactics and her submarines, and the convoy system was not working. A statement headlined from the Truman committee report provided tragic summary of the whole anti-submarine picture:

"These sinkings exceed the combined Allied building in 1942."

In 1942 we needed a coordinated anti-submarine command—trained personnel—new weapons—new tactics—and we needed them fast. We were literally exhausting our supply of ships—and, even more serious, our irreplaceable supply of trained crews.

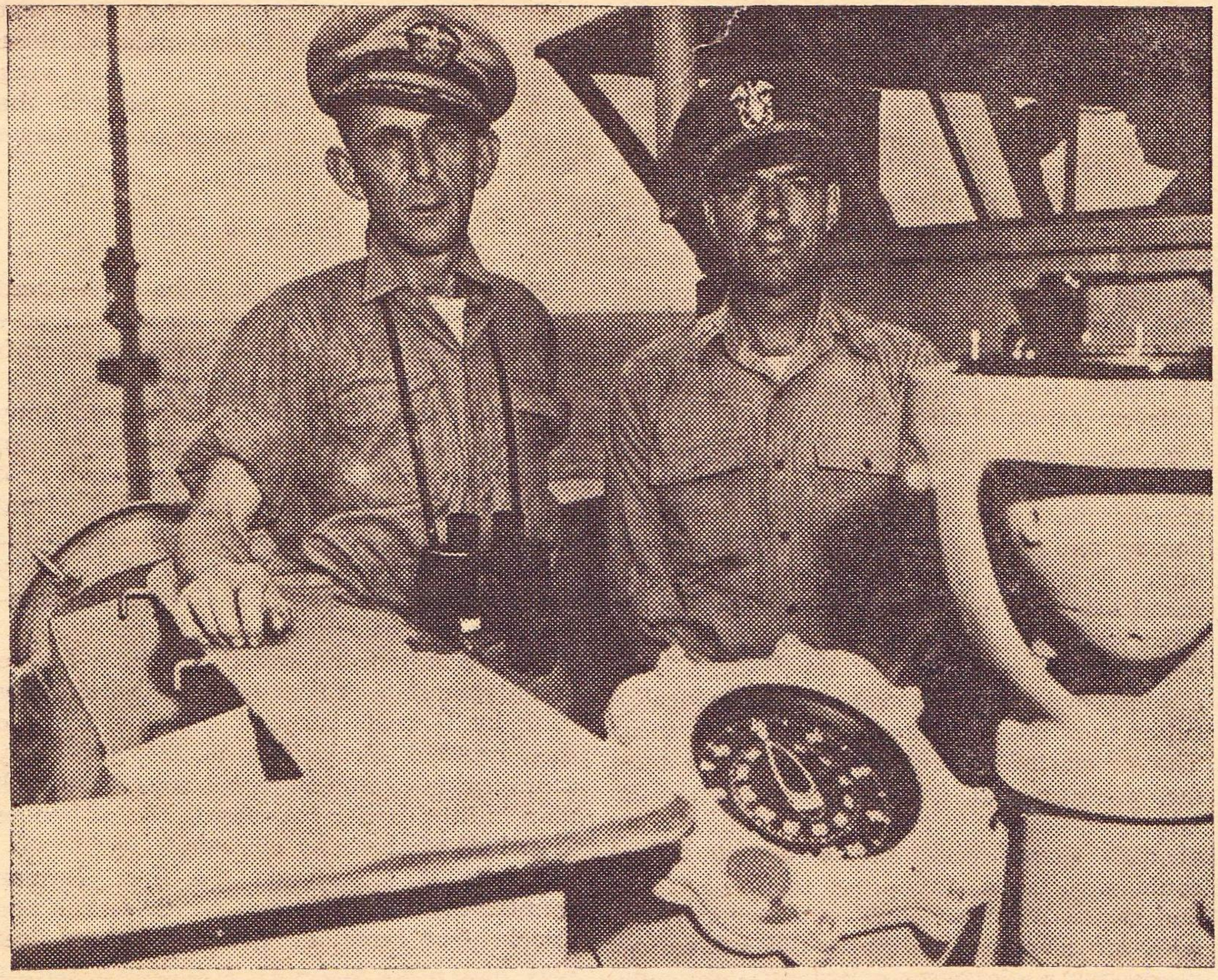
The job of licking the submarine was traditionally the Navy job, and with top priority given to anti-submarine warfare, action came with the necessary speed. To insure a coordination and concentration of effort which would mean a minimum of delay, there was formed an administrative fleet without ships, the Tenth Fleet. It was commanded by Admiral Ernest King himself, through his Chief of Staff, Admiral F. S. Low. To it was pledged the full power of the Atlantic Fleet.

New Weapons Are Needed

New weapons and refinements of those in use were urgently needed—research and development could provide them. But regardless of the weapons developed and the devices used, they could sink submarines only when brought to bear against the enemy by a well-trained ship or aircraft.

Two special units were made directly responsible to the Tenth Fleet. One, the anti-submarine warfare operational research group, was made up of civilian scientists. The other was the Anti-submarine Development Detachment (in Navy jargon, ASDEVLANT) charged with testing weapons, evaluating their tactical uses, and training squadrons.

ASDEVLANT soon became a roster of the great names in anti-submarine warfare.



The keen minds of capable U. S. naval officers direct the operations of the small carriers used against Nazi subs in World War II

Commander, now Captain, A. B. Vosseller, assumed command. Annapolis 1924, naval aviator, young, aggressive, "old navy" by background but "young navy" in that accomplishment came first, spit and polish second; he had commanded the Anti-submarine school in Boston, long been an able foe of the submarine. Commander C. M. Heberton was his executive officer.

Operations Officer Is Selected

From command of a Marine squadron in the Caribbean came the operations officer, Commander John W. Gannon. Under his direction, with the assistance of a young Annapolis graduate, Lieutenant H. D. Remington, was the training program which paid such rich dividends in enemy submarines sunk.

Development of new weapons—the American version of secret weapon in *use* in contrast to Goebbel's shouted secret weapons of words—was under Commander D. E. Wait. Tactics were the basic responsibility of Lieutenant Commander G. R. Fiss, product of the Navy's early aviation cadet program. Months before, "Doc" Fiss had matched wits with U-boat commanders, and won.

These were the men to command the special effort to destroy the submarine menace—professional Navy men, skilled in their profession. To help them came a strangely assorted variety of pilots and ground officers, an assortment common to America's wartime navy. Pilots included men who had sighted subs and sunk same, boys fresh from the great naval training programs.

Ground officers were typical of the naval reserve—here a lieutenant who had earned $20,000.00 a year in civilian life, beside him another whose annual income had been barely a tenth of that sum. All were to be banded together in one effort; to smash the

submarine offensive. And all were convinced that air power could do the trick.

Tradition was cast overboard at once, and ASDEVLANT became a strange spot of apparent confusion on an otherwise orderly naval air base. Most naval air squadrons had a single type plane, but ASDEVLANT had a hangar jammed with every kind of naval aircraft, from stubby Grumann fighters to huge four-engine bombers. Most naval units were either air or surface, but ASDEVLANT soon had a respectable surface fleet of almost every known type, as well as its conglomeration of aircraft.

So, too, with its personnel. Baggy tweed suits and bald or gray heads were almost as common as naval uniforms in the huge hangar and sprawling collection of Quonset huts. Every resource the Navy could command was out to lick the submarine.

The first problem was to utilize air power with full efficiency against the U-boat. For aircraft are, by their very nature, ideally suited to offensive action against submarines. The submarine of 1943 was primarily a surface weapon and, when driven down, was largely impotent. Further, aircraft, by virtue of their great speed and maneuverability, could surprise a submarine on the surface and attack before it could submerge. Thus, with air power in full use, the submarine shadowing a convoy or patrolling a shipping lane was in constant danger of swift, disastrous attack.

First Results Are Small

In spite of this apparent use for aircraft in anti-submarine warfare, their record in America was far from impressive. Only 11 subs had been sunk by United States planes prior to 1943, and the toll of shipping destroyed showed no sign of abatement. Sound training and new tactics were required. Nineteen of every twenty subs attacked by aircraft in 1942 escaped to fight another day—but that record was to change with heart-warming speed.

Defective bombing permitted subs to escape, and so up and down the waters of Narragansett Bay and off Block Island plodded ASDEVLANT's Coast Guard cutters, towing targets at the rate of surfaced submarines while planes made practise bombing run after monotonous practise bombing run.

Many pilots had never before even seen an undersea boat, so submarines from the great bases on Long Island Sound delayed their operational cruises to play hide and seek with aircraft while aviators learned the habits of the enemy and came to appreciate the tactical problem faced.

Pilots Cruise in Subs

Pilots, none too happily, to be sure—went out on the submarines for practise dives—saw the fearsome power of a diving aircraft from the submariner's point of view.

Submarine commanders, equally unhappy in most cases, took their turn in the air. In special search and attack exercises each pilot learned to use his plane to the full extent of its capabilities in an effort to outwit his submarine opponent. Soon trained Navy squadrons were to meet the Germans in combat all over the Atlantic—and win.

As the squadrons rolled out in a higher and higher state of readiness, the toll of ships sunk by U-boats reached a high mark and then receded, for in May of 1943 the Navy counterattack came and more subs were sunk than in any earlier two-month period—more than half of these by aircraft.

July of 1943 brought the first German counter measure to sustained air search and attack. Out came the German U-boat fleet that had been virtually withdrawn during June, with a new strategy and with new weapons. Heavy deck guns were replaced with clusters of anti-aircraft weapons. Now the Nazis were ready to accept the challange of aircraft and fight it out. Not only was their guess a pretty questionable one to start with, but it became a catastrophic error as the Navy countered with increased fire power from its planes. For four action packed months the battle raged—submarines meeting aircraft attack on the surface, guns blazing.

Pilots Accept Challenge

Navy pilots took up the challenge with the same reckless daring that characterized all their combat operations. On two successive days one young flier, Lieutenant A. H. Sallenger, sighted surfaced submarines. He roared into his first attack through a hail of AA and sank the U-boat. He came through unscathed.

Back on the flight deck of the *U.S.S. Card,* the "jeep" aircraft carrier from which he was operating, he was contemptuous of

submarine gunners' accuracy. The following day he ruefully admitted to shipmates who spotted his rubber life raft that his judgment may have been a little hasty, for his second submarine had shot him down. Nonetheless, he held to his belief—and his record of four confirmed kills gives credence to his faith in aircraft weapons.

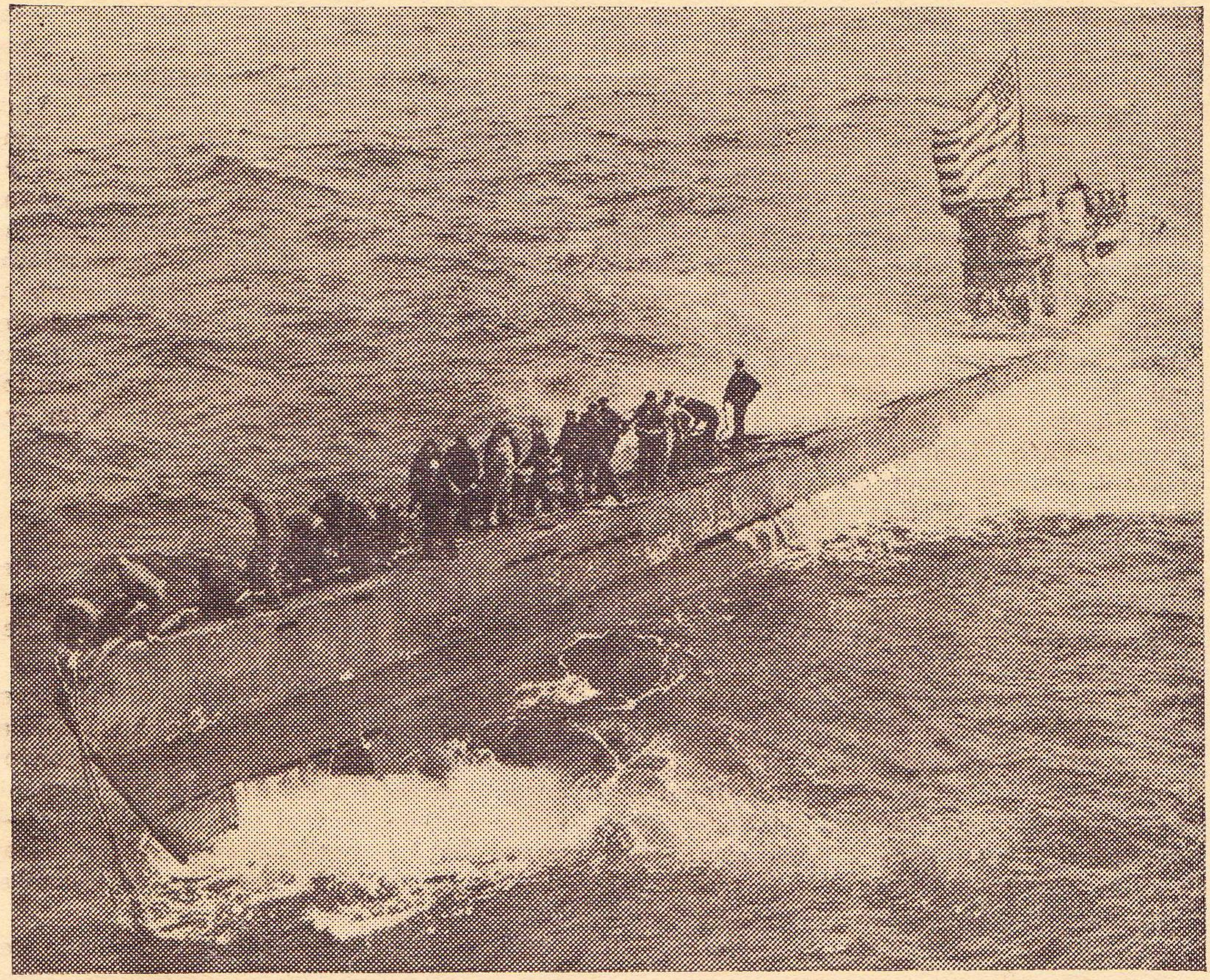
All over the Atlantic it was the same story. Almost daily the Germans learned that it made little difference where they attempted to operate—naval aircraft would find them. And be the plane a land-based four-engine bomber or a carrier-launched Avenger, the result was more and more often foredoomed. More than half of the attacks were ending in "sunk" or "probably sunk" assessments by conservative boards studying the evidence.

From July through October naval aircraft sank 33 German submarines—more than combined United States forces could claim during all of the preceding months of the war! During those same months the U-boat offensive in the western Atlantic saw its greatest failure—for the subs sank fewer than 30 ships.

Germans Try New Torpedo

A German counter weapon or tactic was certain to follow. In October 1943, the first German acoustic torpedo smashed into an Allied convoy. Here was a truly fancy gadget, for it took the aiming problem out of the submarine picture and let the submarine fire with greater safety to itself and at the same time guaranteed an improved chance of a hit.

Attracted by the sound of the ship's propellers, the torpedo homed on that sound until the hit was scored. But, with an adequate research and experimental unit already in action, the Navy was ready to meet the threat.



Trained personnel man the captured Nazi submarine and make fast lines to tow it into port

Within a matter of days German commanders, closing on a convoy to fire their new weapons, heard a new and peculiar sound they dubbed the "singing saw." Puzzled and afraid the sound meant they had been detected, most drew back. Some of the more courageous fired anyway, but no sound of an explosion came to their ears.

Navy's "Singing Saw"

The "singing saw"—actually a simple gadget of steel bars towed behind the merchant ship and rattling like underwater castanets at the required sound frequency to attract the acoustic torpedo—was luring the deadly weapon to exhaustion. For the sound of the "singing saw" drowned out all ship's noises to the sensitive ears of the torpedo and it circled the castanets impotently—while the convoys went through.

In addition, constant air cover over threatened convoys made it more and more difficult for the U-boat even to gain position for attack. An integrated system of air support gave virtually solid cover to important convoys from port to port—land-based planes operating until the convoy was hundreds of miles from shore, where escort aircraft carriers took up the responsibility.

Frustrated by day, the subs went on the defensive—hoped for security and a chance to do some damage by night attacks. Again the Navy was ready with new and improved radar equipment, and with pilots trained to a standard of skill never before demanded in aviation history. Day and night operations of aircraft began from aircraft carriers as well as from land fields.

In addition, powerful searchlights were installed on anti-submarine planes of all types. The U-boat surfacing at night was no more secure than by daylight. First contact was made by radar, and then, as the range was closed to a little less than a mile, the brilliant beam was snapped on. Frozen with surprise—often blinded by the light—submarine crews had little chance to man their weapons before the bombs fell.

Enemy Subs Try Again

Still defensive, the Germans countered again. Since radar was required to find them, they equipped each submarine with a radar receiver which would warn of the approach of the feared aircraft. Thus the submarine could submerge as the signal grew stronger and while the plane was a safe distance away. For a time the tactic worked. The subs were safe, although they in turn sank few ships.

Their respite, however, was brief. Pictures taken from aircraft when attacking submarines had shown the new device on submarine conning towers, and the "double domes" went to work. First it was determined that the device was a radar receiver antenna. Then out came "Vixen," a foxy little instrument to attach to our own aircraft radar.

When a target was picked up, "Vixen" automatically controlled the power output of the radar. The signal heard by the German U-boat thus would seem to fade as though the plane was heading *away* from the submarine even as it homed in to attack. So, "fat, dumb and happy," in the words of naval pilots, the U-boat waited for its doom. Again the Germans took their beating and by early 1944 they were losing two subs for every ship they managed to sink—a far cry from 1942!

Navy Develops Weapons

However, it's not enough merely to counter enemy devices and tactics. New weapons of our own were in a constant state of development.

Early in January of 1944 one of the newer escort aircraft carriers was running a special anti-submarine patrol in advance of a convoy enroute from Africa to England. Her air group was on its first operational cruise—a cruise that had been without incident. Gray early morning light saw the first combat patrol take the air.

Ten minutes later history was made, for this was no ordinary pair of Avengers searching ahead of the ship. Beneath the wings of these planes hung a new weapon—aircraft rockets.

Good-by, German Sub!

Here's the chronology of the attack:

0714—Launched anti-submarine patrol.

0720—Surfaced submarine sighted by Lt. (jg) McFord in TBF No. 32, who started approach, accompanied by Lt. (jg) Seeley in TBF No. 24.

0724—Lt. (jg) McFord made rocket attack. One probable hit.

0725—Lt. (jg) Seeley made rocket attack. Two hits. Submarine started to submerge, all but conning tower under. After hits by second rocket salvo, submarine fully surfaced and started left turn.

0726—Lt. (jg) McFord dropped depth charges straddling submarine at leading edge of conning tower.

0730—Submarine again started to submerge.

0731—Lt. (jg) Seeley dropped depth bombs simultaneously with submergence of conning tower.

0732—Submarine resurfaced, fifty degrees down by the stern.

0736—Large cloud of yellowish-green smoke arose from forty feet aft of conning tower.

0746—Submarine sank, ten degrees down by the stern, leaving no swirl or wake.

No Survivors Or Debris

There was almost as much awe as jubilation on the flight deck as McFord and Seeley came home, for there had been no survivors and almost no debris—only a mortally wounded submarine out of control and sinking after the swift rocket attacks.

Rocket attacks by another squadron were quick to follow. Even as McFord made his dive, another escort carrier cruised several hundred miles to the west.

Late in the afternoon five days later, two of this carrier's planes, on routine patrol, came on a scene that is the U-boat hunter's dream. Some ten miles away were two—possibly three—submarines lying side by side. Here was a refueler—"milch cow"—sub at work.

Down roared the two planes. Ensign B. J. Hudson had made the original sighting and led the way. Rockets blazed their way from the aircraft and two were seen to strike the larger U-boat, one tearing into the hull aft of the conning tower to come out through the deck.

Ensign Drops Depth Charges

At extreme low level, and in a dangerous glide, Hudson followed his rocket attack by dropping his depth charges, landing one squarely between the submarines, and made a violent pull out to avert a crash. Circling the scene he saw scores of men leave the submarines in panic-stricken haste and hurl themselves into the water.

Now down came Ensign W. M. McLane, adding his Buck Rogers note to the scene as flaming rockets struck into the still surfaced submarine. His bomb drop was accurate as well, and first the smaller, then the larger submarine slid beneath the waves leaving dozens of Germans swimming in the debris.

Here was a weapon of sensational value—used three times by Navy aircraft, and three submarines, in the words of our ultra-conservative assessment bodies, "probably sunk." But even more significant than the attacks themselves were the events leading up to them, for this completely new weapon for anti-submarine warfare made its kills only five months after first test firing of experimental rockets!

New Rocket Is Developed

The Navy began development of a rocket program in July, 1943. Test firing of the first Navy forward firing rocket occurred in California on August 20. Recognizing the potentialities of the weapon in anti-submarine work, the problem of developing needed equipment and of determining tactics and of conducting training came to ASDEVLANT.

Working with top speed, a range was built on Nantucket Island. Test flights were flown, sights developed, aiming allowances computed, all theory checked by firing from ASDEVLANT planes. In a voluntary censorship that worked, the islanders kept the Navy's secret. By December first the first squadron destined to use the new weapon against the enemy was fully trained. December 15 saw them at sea, and in January the weapon—and training—proved itself. Aircraft rockets were in anti-submarine warfare to stay.

The rockets may have frightened the Germans more than any other weapon or device, but it was another gadget that really drove them to distraction, for they never quite figured it out. The expendable radio sonobuoy proved to be almost the top surprise of World War II.

Once submerged after aircraft attack, a U-boat skipper felt secure. But, suddenly, in late 1943, that security vanished. Hours after submergence the submarine periscope would cautiously emerge only to find planes still circling overhead.

Sono-Buoy Tracks Subs

The explanation was use of the sono-buoy. When the submarine submerged, aircraft would lay a pattern of these buoys around the point of submergence. Each was a miniature broadcasting station transmitting underwater sounds to the receiver in the aircraft. Each had its own special frequency, so that there was no doubt as to which buoy was heard.

Thus, as the submarine moved away from the point of submergence, listeners in the plane would hear the U-boat's propellers and could, in a sense, "track" it on its escape route. In some cases contact was held for hours until surface craft reached the scene.

As contact with the enemy grew more and more difficult to make, the sono-buoy took on ever increasing importance. It made joint air-surface attacks possible. Aircraft, with their speed and range, often made the original contact and attack. If the submarine was not sunk, contact was held by means of the sono-buoy until surface units were able to locate and destroy the enemy.

Ceaseless Hunt Goes On

In 1944 roving task groups hunted submarines by day and by night. Actions lasted for as long as 78 hours against a fighting and able U-boat, but more and more often the result was certain:

"Task Group 21.5 sank one Uncle Boat Latitude 40°16'N, 13°58'W after joint air-surface action. Survivors including captain are being landed at Casablanca."

The task group led by the aircraft carrier Guadalcanal provided fitting climax when in June, 1944 they captured a German submarine abandoned under attack by its terror-struck crew, and towed it into Bermuda.

The Germans were far from ready to give up though, and they now came out with their own prize development. The submarine of 1943 had to surface to survive. Electric power drove it under the surface, and batteries were soon exhausted. By late 1944 the Germans partly reduced this weakness with an ingenious arrangement they called "schnorkel" or snout, an ungainly contraption mounted on the conning tower like a huge stove-pipe periscope.

It provided both an air intake and an exhaust vent, and so enabled the submarine to operate at periscope depth on the same diesel motors it used on the surface. There were many weaknesses to "schnorkel"—crews didn't like it, it caused a defensive attitude among submariners, it was unusable in rough weather—but it meant relative safety from air search and attack. Nevertheless, "schnorkel" thwarted the Navy's avowed purpose—to exterminate the U-boat.

How to Find A Schnorkel

Already ASDEVLANT was at work on the problem—how to find the schnorkeling sub. From its tests came one of the wildest yarns of the war. We, of course, had no subs with schnorkels, so to conduct experiments, ASDEV needed a dummy. It's no small job to build a self-propelled dummy smoke-stack in the water, but finally it was done.

The gadget failed to function perfectly on its early trials, and the builder, a nationally famous yacht designer, out-schnorkeled the schnorkel. On his he built a special platform on which he might ride to check the performance of his brain child. Solely in the interests of practical design, said platform was a bicycle seat—pedals provided a footrest as designer Burgess rode his strange craft.

Sea-Going Bike

First warning the Coast Guard at Newport had that ASDEV was off again, was the sight of what appeared to be a man sitting in the middle of Narragansett Sound. The skipper of the CG83374 first saw him and turned to the duty officer.

"Look, I may be crazy, but I think I see a man out there!"

Ordered to investigate by the outraged duty officer, the harbor patrol raced out to the apparition. Close up it looked even worse to the coast guardsmen's dazed eyes—there on a bicycle seat, moving majestically across the Bay was a dignified, elderly gentleman in a tweed suit—handlebar mustache waving gently in the breeze of his own progress.

Slowly Dutch Weiland wheeled his boat alongside. With a courtly bow the old gentleman doffed his checked cap.

"Good morning, sir," he said, and continued across the Bay. Without a word Dutch cruised back to his base.

"Send someone else to investigate," he said. "For me, it's just ASDEVLANT again."

And so it was, but eventually the answer to the schnorkel was worked out and again the U-boat found it had met its master. New and improved radar picked up even the weak echo from the "smokestack" and new search plans were built on the ranges determined.

Blockading A Whole Ocean

But all the Navy's work was not defensive —two daring concepts on the offensive helped finish off the U-boat's last chance. One was the use of aircraft carriers as offensive weapons and the other was a blockade of an entire ocean. Both worked.

For the first genuine courage was required. During the early years of the war carriers had taken a terrific beating. Used for convoy escort, they had been regarded as an emergency necessity, but all on board slept in life jackets. Now it was proposed to send them out to *look* for submarines, not to avoid them.

Carriers Begin to Hunt

Whatever the risk, the gamble looked good to Tenth Fleet. Driven from the East Coast, the subs had formed into huge packs in mid-Atlantic, decimating convoys out of the range of land-based aircraft. So, straight into the wolf-packs, ploughed the jeep carriers—the *Bogue,* the *Card,* the *Santee,* the *Croatan,* the *Core,* and later the *Block Island, Wake Island* and *Guadalcanal.* The result was spectacular victory for the CVE's and for air power, for while the *Block Island* was eventually lost, more than 30 submarines fell to CVE task groups, and there was no "safe" area left in the Atlantic for a German U-boat.

The second undertaking offered less risk, but seemed almost fantastic—it proposed to blockade the South Atlantic by flying barrier patrols from South America to Africa. Two things made it possible—a base on Ascension Island and the finest long range bomber squadron in the world, the Navy's VB-107.

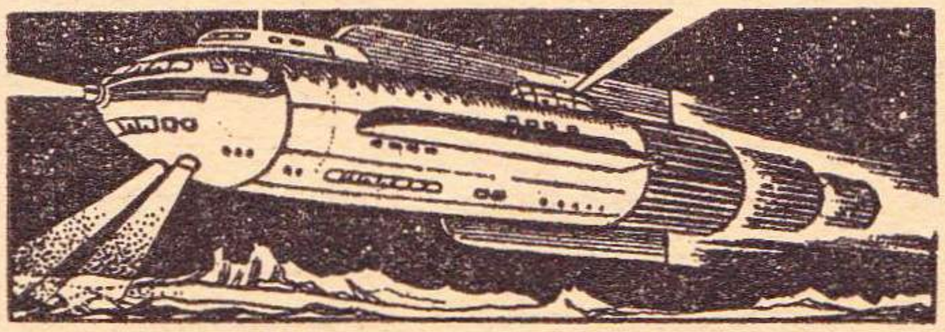
Weaned on PBY's, and flying the longest patrols ever flown in these venerable Navy standbys, the squadron had graduated to B-24's (PB4Y's to the Navy) and was ready for its supreme test.

In the coming months it met and passed that test. CVE's could go out and get submarines—the Ascension-based squadron had to wait for the subs to come to them. Nevertheless, they matched the record of the finest CVE squadron, and wiped out an entire flotilla of German blockade runners in the bargain. No small part of their success lay in the courage of the pilots, men like Squadron Commander Prueher, who gave his life in an attack on three enemy submarines some 1500 miles from his base.

So it was, in 1944, that the Navy seemed to have doomed the submarine to oblivion. Then, from sources still unrevealed, began to come rumors of the first true submarine in history—a ship able to remain submerged indefinitely, as fast submerged as an older submarine on the surface, capable of extreme ranges. V-E day caught the Germans with that submarine still not operational. But it's the U-boat of tomorrow's war, and let's not forget that as late as May 6, 1945, a ship was sunk just off Block Island by a German submarine!

True, that submarine paid for the attack with its life, but it was a *prepared* Navy that got the last Navy kill of the war, and in 194?—what nation would not, if necessary, sacrifice 50 submarines for 50 atomic bombs on American industrial centers?

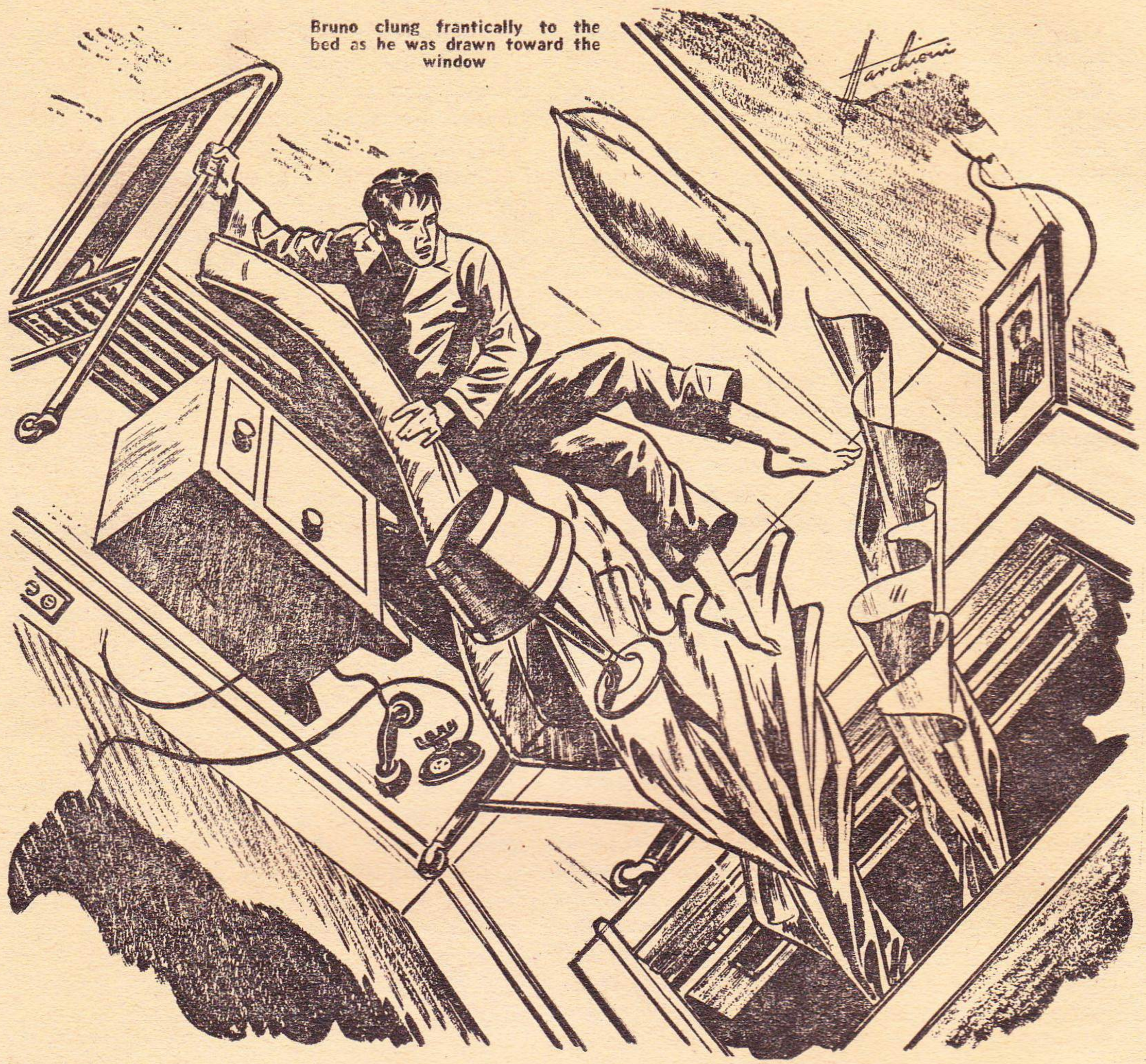
Not one of us wants World War III—but if it comes, let's not lose it. Let's not sell anti-submarine warfare short.



NEXT ISSUE'S FEATURED NOVEL

LORD OF THE STORM

By KEITH HAMMOND



Bruno clung frantically to the bed as he was drawn toward the window

DREAM'S END

By HENRY KUTTNER

Risking his own life force to cure a patient's psychosis, Dr. Robert Bruno learns of the true individualism of human minds!

THE sanitarium was never quiet. Even when night brought comparative stillness, there was an anticipatory tension in the air—for cyclic mental disorders are as inevitable, though not as regular, as the swing of a merry-go-round.

Earlier that evening Gregson, in Ward 13, had moved into the downswing of his manic-depressive curve, and there had been trouble. Before the orderlies could buckle him into a restraining jacket, he had managed to break the arm of a "frozen" catatonic patient, who had made no sound even as the bone snapped.

Under apomorphine, Gregson subsided. After a few days he would be at the bottom

of his psychic curve, dumb, motionless, and disinterested. Nothing would be able to rouse him then, for a while.

Dr. Robert Bruno, Chief of Staff, waited till the nurse had gone out with the no longer sterile hypodermic. Then he nodded at the orderly.

"All right. Prepare the patient. I want him in Surgery Three in half an hour."

He went out into the corridor, a tall, quiet man with cool blue eyes and firm lips. Dr. Kenneth Morrissey was waiting for him. The younger man looked troubled.

"Surgery, Doctor?"

"Come on," Bruno said. "We've got to get ready. How's Wheeler?"

"Simple fracture of the radius, I think. I'm having plates made."

"Turn him over to one of the other doctors," Bruno suggested. "I need your help." He used his key on the locked door. "Gregson's in good shape for the experiment."

Morrissey didn't answer. Bruno laughed a little.

"What's bothering you, Ken?"

"It's the word experiment," Morrissey said. "Pentothal narcosynthesis was an experiment when they first tried it. So is this—empathy surrogate. If there's a risk, I'll be taking it, not Gregson."

"You can't be sure."

They stepped into the elevator.

"I *am* sure," Bruno said, with odd emphasis. "That's been my rule all my life. I make sure. I've got to *be* sure before I undertake anything new. This experiment can't possibly fail. I don't run risks with patients."

"Well—"

"Come in here." Bruno led the way from the elevator to an examination room. "I want a final check-up. Try my blood-pressure." He stripped off his white coat and deftly wound the pneumatic rubber around his arm.

"I've explained the whole situation to Gregson's wife," Bruno went on as Morrissey squeezed the bulb. "She's signed the authorization papers. She knows it's the only chance to cure Gregson. After all, Ken, the man's been insane for seven years. Cerebral deterioration's beginning to set in."

"Cellular, you mean? Um-m. I'm not worried about that. Blood-pressure okay. Heart—"

Morrissey picked up a stethoscope. After a while he nodded.

"A physician hasn't any right to be afraid of the dark," Bruno said.

"A physician isn't charting unmapped territory," Morrissey said abruptly. "You can dissect a cadaver, but you can't do that to the psyche. As a psychiatrist you should be the first to admit that we don't know all there is to know about the mind. Would you take a transfusion from a meningitis patient?"

Bruno chuckled. "Witchcraft, Ken—pure witchcraft! The germ theory of psychosis! Afraid I'll catch Gregson's insanity? I hate to disillusion you, but episodic disorders aren't contagious."

"Just because you can't see a bug doesn't mean it isn't there," Morrissey growled. "What about a filterable virus? A few years ago nobody could conceive of liquid life."

"Next you'll be going back to Elizabethan times and talking about spleen and humors." Bruno resumed his shirt and coat. He sobered. "In a way, though, this *is* a transfusion. The only type of transfusion possible. I'll admit no one knows all there is to know about psychoses. Nobody knows what makes a man think, either. But that's where physics is beginning to meet medicine. Witchcraft and medicine isolated digitalin when they met. And scientists are beginning to know the nature of thought—an electronic pattern of energy."

"Empirical!"

"Compare not the brain, but the mind itself, to a uranium pile," Bruno said. "The potentialities for atomic explosion are in the mind because you can't make a high-specialized colloid for thinking without approaching the danger level. It's the price humans pay for being *homo sapiens.* In a uranium pile you've got boron-steel bars as dampers, to absorb the neutrons before they can get out of control. In the mind, those dampers are purely psychic, naturally—but they're what keep a man sane."

"You can prove anything by symbolism," Morrissey said sourly. "And you can't stick bars of boron-steel in Gregson's skull."

"Yes, I can," Bruno said. "In effect."

"But those dampers are—*ideas!* Thoughts! You can't—"

"What is a thought?" Bruno asked.

Morrissey grimaced and followed the Chief of Staff out.

"You can chart a thought on the encephalograph—" he said stubbornly.

"Because it's a radiation. What causes that radiation? Energy emitted by certain electronic patterns. What causes electronic

patterns? The basic physical structure of matter. What causes uranium to throw off neutrons under special conditions? Same answer. If an uranium pile starts to get out of control, you can damp it, if you move fast, with boron or cadmium."

"If you move fast. Why use Gregson? He's been insane for years."

"If he'd been insane for only a week, we couldn't prove it was the empathy surrogate that cured him. You're just arguing to dodge the responsibility. If you don't want to help me, I'll get somebody else."

"It would take weeks to train another man," Morrissey said. "No, I'll operate. Only —have you thought of the possible effect on your own mind?"

"Certainly," Bruno said. "Why the devil do you suppose I've been running exhaustive psychological tests on myself? I'm completely oriented, I'm so normal that my mind must be full of boron dampers." He paused at the door of his office. "Barbara's here. I'll meet you in Surgery."

Morrissey's shoulders slumped. Bruno smiled slightly and opened the door. His wife was sitting on a leather couch, idly turning the pages of a psychiatric review.

"Studying?" Bruno said. "Want a job as a nurse?"

"Hello, darling," she said, tossing the magazine aside.

She came toward him quickly. She was small and dark and, Bruno thought academically, extremely pretty. Then his thoughts stopped being academic as he kissed her.

"What's up?"

"You're doing that operation tonight, aren't you? I wanted to wish you luck."

"How'd you know?"

"Bob," she said, "we've been married long enough so I can read your mind a little. I don't know what the operation is, but I know it's important. So—for luck!"

She kissed him again. Then, with a smile and a nod, she slipped out and was gone. Dr. Robert Bruno sighed, not unhappily, and sat behind his desk. He used the annunciator to check the sanitarium's routine, made certain everything was running smoothly, and clicked his tongue with satisfaction.

Now—the experiment. . . .

SURGERY THREE had some new equipment for the experiment. Bruno's collaborator, Andrew Parsons, the atomic physicist, was there, small and untidy, with a scowling, wrinkled face that looked incongruous under the surgeon's cap. There was to be no real surgery; trepanning wasn't necessary, but aseptic precautions were taken as a matter of course.

The anesthetist and two other nurses stood ready, and Morrissey, in his white gown, seemed to have forgotten his worry and had settled down to his usual quiet competence. Gregson was on one of the tables, already prepped and unconscious. Intravenous anesthesia would presently supplement the apomorphine in his system, as it would also be administered to Bruno himself.

Ferguson and Dale, two other doctors, were present. At worst quick cerebral surgery might be necessary, if anything went badly amiss. But nothing could, Bruno thought. Nothing could.

He glanced at the sleek, shining machines, with their attachments and registering dials. Not medical equipment, of course. They were in Parsons' line; he had planned and built them. But the idea had been Bruno's to begin with, and Bruno's psychiatric knowledge had complemented Parsons' technology. Two branches of science had met, and the result would be—a specific for insanity.

Two spots on Bruno's head had been shaved clean. Parsons carefully affixed electrodes, which were already in place on Gregson's skull.

"Remember," Parsons said, "you should be as relaxed as possible."

"You took no sedative, Doctor," Morrissey said.

"I don't need one. The anesthetic will be enough."

The nurses moved with silent competence about the table. The emergency oxygen apparatus was tested. The adrenalin was checked; the sterilizer steamed on its table. Bruno emptied his mind and relaxed as a nurse swabbed his arm with alcohol.

Superimposure of the electronic mental matrix of sanity . . . psychic rapport . . . the pattern of his sanity-dampers would be fixed unalterably in the twisted, warped mind of the manic-depressive.

He felt the sting of the needle. Automatically he began counting. One. Two. Three. . . .

He opened his eyes. The face of Morrissey, intent and abstracted, hung over him. Beyond Morrissey was the bright ceiling fluorescent, glaring down with a brilliance that made Bruno blink. His arm stung slightly

but otherwise there were no after effects.

"Can you hear me, Doctor?" Morrissey said.

Bruno nodded. "Yes. I'm awake now." His tongue was a little thick. That was natural. "Gregson?"

But Morrissey's face was growing smaller. No, it was receding. The ceiling light shrank. *He was falling—*

He shot down with blinding rapidity. White walls rushed up past him. Morrissey's face receded to a shining dot far above. It grew darker as he fell. Winds screamed, and there was a slow, gradually increasing thundering like an echo resounding from the floor of this monstrous abyss.

Down and down, faster and faster, with the white walls fading to gray and to black, till he was blind, till he was deafened with that roaring echo.

Visibility returned. Everything was out of focus. He blinked, swallowed, and made out the rectangular shape of a bedside screen. There was something else, white and irregular.

"Are you awake, Doctor?"

"Hello, Harwood," Bruno said to the nurse. "How long have I been out?"

"About two hours. I'll call Dr. Morrissey."

She stepped out of the room. Bruno flexed his muscles experimentally. He felt all right. Not even a headache. His vision was normal now. He instinctively reached for his wrist and began counting the pulse. Through the window he could see the slow motion of a branch, the leaves fluttering in a gentle wind. Footsteps sounded.

"Congratulations," Morrissey said, coming to the bed. "Gregson's in shock, but he's already beginning to come out of it. No prognosis yet, but I'll bet a cookie you've done it."

Bruno let out his breath in a long sigh. "You think so?"

Morrissey laughed. "Don't tell me you weren't sure!"

"I'm always sure," Bruno said. "Just the same, confirmation's always pleasant. I'm thirsty as the devil. Get me some ice, Ken, will you?"

"All right." Morrissey leaned out of the door and called the nurse. Then he came back and lowered the Venetian blind. "Sun in your eyes. That better? How do you feel, or need I ask?"

"Quite normal. No ill effects at all. Say, you'd better notify Barbara I'm alive."

"I already have. She's coming over. Meanwhile, Parsons is outside. Want to see him?"

"Sure."

THE physicist must have been near the door, for he appeared almost instantly.

"I'll have to depend on you now," he said. "Psychiatric examinations are out of my line, but Dr. Morrissey tells me we've apparently succeeded."

"We can't be sure yet," Bruno said cautiously, reaching for cracked ice. "I'm keeping my fingers crossed."

"How do you feel?"

"If there's a healthier specimen in this hospital than Dr. Bruno," Morrissey said, "I've yet to hear of it. I'll be back. I've got to check a patient." He went out.

Bruno lay back on his pillow.

"I'll be up and around tomorrow," he said, "and I'll want to make some tests on Gregson then. Meanwhile, I'll relax—for a change. One good thing about this place; the routine's so perfect that you can unhitch yourself completely and let yourself rest, if you want to. A dependable staff."

The Venetian blind clattered in the wind. Parsons grunted and went toward it, taking hold of the cord.

He raised the blind and stood there, his back to Bruno. But it was dark outside the window.

"The sun was in my eyes," Bruno said. "Wait a minute! That was only a little while ago. Parsons, something's wrong!"

"What?" Parsons asked, without turning.

"Morrissey said I was unconscious for only two hours. And I took anesthesia at half-past nine. At night! But the sun was shining in that window when I woke up, a few minutes ago!"

"It's night now," Parsons said.

"It can't be. Get Morrissey. I want to—"

But Parsons suddenly leaned forward and opened the window. Then he jumped out and vanished.

"*Morrissey!*" Bruno shouted.

Morrissey came in. He didn't look at Bruno. He walked quickly across the room and jumped out of the window into the darkness.

Ferguson and Dale entered, still in their operating gowns. They followed Morrissey through the window.

Bruno hoisted himself up. Three nurses came through the door. An intern and an orderly followed. Then others.

In nightmare procession the staff filed into

Bruno's room. In deadly silence they walked to the window and jumped out.

The blankets slipped down from Bruno's body. He saw them sail slowly toward the window—

The bed was tilting! No—the room itself was turning, revolving, till Bruno clung frantically to the head-board while gravity dragged him inexorably toward a window that now gaped directly below him.

The bed fell. It spilled Bruno out. He saw the oblong of the window opening like a mouth to swallow him. He plunged through into utter blackness, into an echoing, roaring hell of night and thunder. . . .

"Oh, good heavens!" Bruno moaned. "What a dream! Morrissey, get me a sedative!"

The psychiatrist laughed. "You've had a dream-within-a-dream before, haven't you, Doctor? It sounds unnerving, but now you've told me all about it. The catharsis is better than a barbiturate."

"I suppose so." Bruno lay back in the bed.

This wasn't the room he had dreamed about. It was much larger, and outside the windows was normal darkness. Morrissey had said that the anesthetic had lasted for several hours.

"Anyway, I'm jittery," Bruno said.

"I didn't know you had any nerves. . . . Here, Harwood." Morrissey turned to the nurse and scribbled down a few symbols on a pad. "There. We'll get your sedative. Don't you want to know about Gregson?"

"I'd forgotten about him completely," Bruno acknowledged. "Can you tell anything definite yet?"

"We caught him on the downcurve of the depressive cycle, remember? Well, he isn't talking yet, but there's a touch of euphoria. The elation will wear off. One thing, you've broken the cycle. His mind isn't adjusted yet to those—damper bars you put in 'em, but off-hand, I'd say it looks pretty good."

"What does Parsons think?"

"He's immersed in calculations. Said he'd be around to see you as soon as you woke up. Here's that sedative."

Bruno accepted the capsules from the nurse and washed them down with water.

"Thanks. I'd rather rest a bit. I must have unconsciously piled up quite a lot of tension."

"So I gather," Morrissey said drily. "Well, here's the bell-cord. Anything else?"

"Just rest." Bruno hesitated. "Oh—one thing." He extended his arm. "Pinch it."

MORRISSEY stared and chuckled. "Still not sure you're awake? I can assure you you are, Doctor. I'm not going to jump out of the window. And it's still night, you'll notice."

When Bruno didn't move, Morrissey pinched up a fold of the other's forearm between thumb and finger.

"Ouch!" Bruno said. "Thanks."

"Any time," Morrissey said cheerfully. "Get some rest now. I'll be back."

He went out with the nurse. Bruno blew out his breath and let his gaze wander around the room. Everything looked perfectly solid and normal. No black, thundering abyss lurked under the floor. An unpleasant dream!

He reached for pad and pencil and made careful notes on the curious double-delusion before he let himself relax. Then he felt the sedative creeping slowly along his nerves, a warm, pleasant sensation that he was glad to encourage. He didn't want to think. Later would be time enough. The empathy surrogate experiment, Gregson, the physicist Parsons, Barbara—later!

He drowsed. It seemed only a moment before he opened his eyes to see sunlight beyond the window. Brief panic touched him, then he looked at his wrist-watch and was reassured to see that it said eleven o'clock. He could hear the muffled sounds of the ordinary hospital routine going on outside door and window. Presently, feeling refreshed, he got up and dressed.

In Nurse Harwood's office he telephoned Morrissey, exchanged brief greetings, and then went to his own office to shower and shave.

He telephoned Barbara.

"Hello, there," she said. "Morrissey notified me you were doing all right. So I thought I'd wait till you woke up."

"I'm awake now. Suppose I come over to the house for lunch?"

"Swell. I'll be waiting."

"Half an hour, then?"

"Half an hour. I'm glad you called, Bob. I was worried."

"You needn't have been."

"Was your experiment a success?"

"Can't tell yet. Keep your fingers crossed."

Ten minute later Bruno's fingers were still crossed as he examined Gregson. Parsons and Morrissey were present. The physicist

kept making notes, but Morrissey stood silent and watchful.

There was very little to be seen as yet. Gregson lay in his bed, the shaved spots on his head white against the dark hair, his features relaxed and peaceful. The typical anxiety expression was gone. Bruno opened the man's eyes and flashed his light into them. Contraction of the pupils seemed normal.

"Can you hear me, Gregson?"

Gregson's lips moved. But he said nothing.

"It's all right. You're feeling fine, aren't you? You're not worried about anything, are you?"

"Headache," Gregson said. "Bad headache."

"We'll give you something for that. Now try to sleep."

Outside, in the corridor, Bruno tried hard to repress his exultation. Parsons blinked at him, scowling.

"Can you tell anything yet?"

Bruno checked himself. "No. It's too soon. But—"

"The manic-depressive phase is passed," Morrissey put in. "He seems rational. And he hasn't been for three years."

"Those damper bars—" Bruno smiled. "Well, we'll have to wait and see. We can't write up a report yet. He's certainly oriented. We'll give him a chance to rest. More tests later. I don't want to jump the gun."

But with Barbara he let himself be more enthusiastic.

"We've done it, Barbara! Found a specific for insanity."

She leaned across the table to pour coffee.

"I thought there were so many types of psychosis that the treatment varied considerably."

"Well, that's true, but we've never got to the real basis of the trouble before. You can cure a cold by rest therapy, force fluids and aspirin, but cold vaccine gets directly to the root of the trouble. Some types of insanity have been thought incurable, but tetanus was incurable till we got a vaccine for it. The empathy surrogate therapy is the lowest common denominator. It works on the electronic structure of the mind, and unless there's physical deterioration, as in advanced paresis, our treatment should work beautifully."

"So that's what you were working on," Barbara said. "Bob, you don't know how glad I am that it's successful."

"Well—we hope. We're almost sure. But—"

"You can take a vacation now? You've been working so hard!"

"A few more weeks, and I'll be ready. I've got to collate my notes. I can't run out on Parsons at this stage. But very soon, I promise."

HE LOOKED up to see her smile. Suddenly he stiffened. Her smile was broadening, stretching, the lower lip dropping till all her teeth showed. The lower lids of her eyes hung . . . stretched. . . .

Her nose lengthened.

Her eyes slowly crawled out of their sockets and lengthened on dreadful stalks down her cheeks.

She melted down and out of sight beneath the table.

The table began to sink.

And now everything around him was melting. Under him the chair became plastic and then fluid. The floor was a bowl, and the walls were dripping down into it, into a shining whirlpool at the center.

He slipped helplessly along that slope till the pool engulfed him, in a chaos of thunder and confusion and sickening horror.

The winds bellowed. . . . The empty drop closed around him. . . . He fell in darkness. . . .

This time, when he woke, he wasn't sure. The panic had not left him. He learned, later, that he had been semi-delirious for eight days, and only Morrissey's unceasing attention had kept him reasonably quiet. Then there were weeks of convalescence, and a vacation, and it seemed a long time before he came back from Florida, tanned and healthy, to resume his duties.

Even then, though, there was the fear.

When he drove toward the blocky buildings of the sanitarium he felt a touch of it brush him. He reached for Barbara's hand, and felt some comfort in the assurance of her nearness. She had been helpful, too, though she had not understood.

Every day after that, when he left her, there was a fleeting apprehension lest he never see her again. To forget the uncertainty of his footing, the ground that was no longer absolutely solid, he plunged into the hospital's routine. And gradually, after more weeks, the terror began to leave him.

Gregson had been cured. He was still under precautionary observation, but all traces of his psychosis seemed to have vanished. There were still minor neuroses, the

natural result of the past six years of abnormal restraint, but they were disappearing under proper therapy. The empathy surrogate treatment was successful. Yet, for a while, Bruno refused to attempt more experiments.

Parsons was displeased. He was anxious to chart a graph on the process, and one trial did not provide enough evidence. Bruno kept putting the physicist off with promises. It eventually ended in a minor spat which Morrissey halted by pointing out that Dr Robert Bruno was, technically, his own patient, and was not yet ready for further research on the dangerous subject.

Parsons, furious, went off. Bruno followed Morrissey into the latter's office and sat down in one of the more comfortable chairs. It was mid-afternoon, and beyond the windows the drowsy hum of summer made a peaceful counterpoint to the conversation.

"Cigarette, Ken?"

"Thanks. . . . Look, Bob." The two men had drawn closer together in the last weeks. Morrissey no longer addressed his Chief of Staff with the former "Doctor." "I've been collating the facts of your case, and I think I've got at the root of the trouble. Do you want to hear my diagnosis?"

"Candidly, I don't," Bruno said, closing his eyes and inhaling smoke. "I'd prefer to forget it. But I know I can't. That would be psychically ruinous."

"You had a cyclic self-containing dream—I suppose you could call it that. You dreamed you were dreaming you were dreaming. You know what your trouble is?"

"Well?"

"You're not sure you're awake now."

"Oh, I'm sure enough," Bruno said. "Most of the time."

"You've got to be sure all the time. Or else make yourself believe that it doesn't matter whether you're dreaming or waking."

"Doesn't matter! Ken! To know that everything may melt away under my feet at any time, and to think that doesn't matter! That's impossible!"

"Then you've got to be sure you're awake. Those hallucinations you had are over. Weeks have passed."

"Hallucinatory time is elastic and subjective."

"It's a defense mechanism—you know that, I suppose?"

"Defense against what?"

Morrissey moistened his lips. "Remember, I'm the psychiatrist and you're the patient. You were psychoanalyzed when you studied psychiatry, but you didn't get all the devils out of your subconscious. Hang it, Bob, you know very well that most psychiatrists take up the work because they're attracted to it for pathological reasons—neuroses of their own. Why did you always insist that you were so utterly sure of everything?"

"I always made sure."

"Compensation. To allow for a basic unsureness and insecurity in your own make-up. Consciously you were sure the empathy surrogate treatment would work, but your unconscious mind wasn't so certain. You never let yourself know that, though. But it came out under stress—the therapy itself."

"Go on," Bruno said slowly.

MORRISSEY tapped the papers on his desk.

"I know my diagnosis is pretty accurate, but you can decide that for yourself. You can tell, perhaps, better than I can. The frontiers of the mind are *terra incognita.* Your simile of a uranium pile was better than you'd realized. When critical mass is approached, there's danger. And the damper bars in your own mind—what did Parsons' machine do to them?"

"I am quite sane," Bruno said. "I think."

"Sure you are, now. You're getting over that explosion. You'd been building up an anxiety neurosis, and the therapy made it blow off. Just how, I don't understand. The electronic patterns of the mind aren't in my field. All I know is that the experiment with Gregson removed the safety blocks from your mind, and you lost control for a while. Thus the hallucinations, which simply followed the path of least resistance. Point One: You're afraid of insecurity and unsureness, and you always have been. Thus your dream follows a familiarly symbolic pattern. At any time the sureness of waking may vanish. Point Two: As long as you think you're dreaming, you're dodging responsibility!"

"Good Lord, Ken!" Bruno said. "I just want to be sure I'm awake!"

"And there's absolutely no way you can be sure of that," Morrissey said. "The conviction must come from your own mind and be subjective. No objective proof is possible. Otherwise, if you fail to convince yourself, the anxiety neurosis will grow back into a psychosis, and—" He shrugged.

"It sounds logical," Bruno said. "I'm be-

ginning to see it pretty clearly. I think, perhaps, this clarification is what I needed."

"Do you think you're dreaming now?"

"Not at the moment—certainly."

"Swell," Morrissey said. "Because the conglobulation of the psych between the forever and upstriding kaleeno bystixing forinder saan—"

Bruno jumped up. "Ken!" he said, dry-throated. "Stop it!"

"Fylixar catween baleeza—"

"Stop it!"

"BYZINDERKONA REPSTILLING AND ALWAYS ALWAYS ALWAYS NEVER KNOWING NEVER KNOWING NEVER KNOWING—"

The words came out in great whirling shining globes. They raced past Bruno's head with a screaming hiss. They bombarded him. They carried him back into a thundering, windy abyss of blackness and terror.

MORRISSEY stepped back from the bed and asked:

Dr. Robert Bruno managed to nod.

"Good," Morrissey said. "You were out for about three hours. But everything's going nicely. You'll be up and around pretty soon. There's plenty to be done. Barbara wants to see you—and Parsons."

"Ken," Bruno said, "wait a minute. Am I awake now? I mean, really awake?"

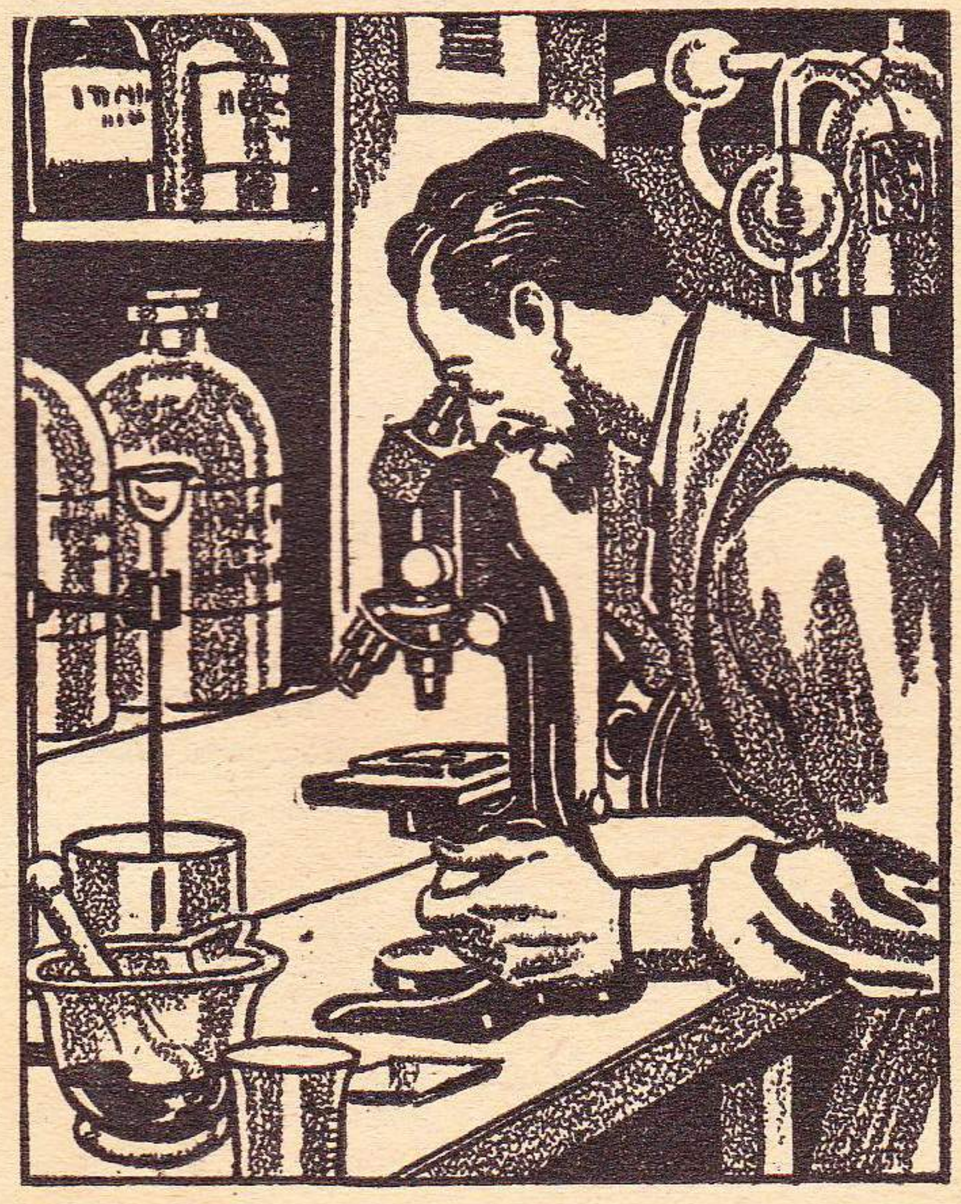
Morrissey stared and grinned.

"Sure," he said. "I can guarantee that."

But Bruno did not answer. His gaze moved to the windows, to the solidity of the walls and ceiling, to the reality of his own hands and arms.

Never knowing?

He looked at Morrissey, waiting for Morrissey to vanish, and the black pit to open again beneath him.



Old Professor de Neant probes into the bottomless well of infinity—
in a powerful, fascinating story of the Law of Chance
which has been hailed as one of the greatest
scientifiction classics of all time!

THE CIRCLE OF ZERO

By

STANLEY G. WEINBAUM

Our Next Issue's Hall of Fame Selection!

Before Petersen could reach the alarm button, the blackjack hit him

PROXY PLANETEERS

By EDMOND HAMILTON

When robots go hunting for uranium on Mercury, a pair of scientists fall under a radio-active spell of hypnotism!

DOUG NORRIS hesitated for an instant. He knew that another movement might well mean disaster.

Here deep in the cavernous interior of airless Mercury, catastrophe could strike suddenly. The rocks of the fissure he was following had a temperature of hundreds of degrees. And he could heard the deep rumble of shifting rock, close by.

But it was not these dangers of the infernal underworld that made him hesitate. It was that sixth sense of imminent peril that he had felt twice before while exploring the Mercurian depths. Each time, it had ended disastrously.

"Just nerves," Norris muttered to himself. "The uranium vein is clearly indicated. I've got to follow it."

As he again moved forward and followed that thin, black stratum in the fissure wall, his eyes constantly searched ahead.

Then a half-dozen little clouds of glowing gas flowed toward him from a branching fissure. Each was several feet in diameter, a faint-glowing mass of vapor with a brighter core.

Norris moved hastily to avoid them. But there was a sudden flash of light. Then everything went black before his eyes.

"It's happened to me again!" Doug Norris thought in sharp dismay.

Frantically he jiggled his controls, cut in emergency power switches, overloaded his tight control beam to the limit. It was no use. He still could not see or hear anything whatever.

Norris defeatedly took the heavy television helmet with its bulging eyepieces off his head. He stared at the control-board, then looked blankly out the window at the distant, sunlit stacks of New York Power Station.

"Another Proxy gone! Seven of them wrecked in the last two weeks!"

It hadn't just happened, of course. It had happened eight minutes ago. It took that long for the television beam from the Proxy to shuttle from Mercury to this control-station outside New York. And it took as long again for the Proxy control-beam to get back to it on Mercury.

Sometimes, a time-lag that long could get a Proxy into trouble before its operator on Earth was aware of it. But usually that was not a big factor of danger on a lifeless world like Mercury. The Proxies, built of the toughest refractory metals, could stand nearly anything but an earthquake, and keep on functioning.

"Each time, there's been no sign of falling rocks or anything like that," Norris told himself, mystified. "Each time, the Proxy has just blacked out with all its controls shot."

THEN, as his mind searched for some factor common to all the disasters, a startled look came over Doug Norris' lean, earnest face.

"There *were* always some of those clouds of radon or whatever they are around, each time!" he thought. "I wonder if—" A red-hot thought brought him to his feet. "Holy cats! Maybe I've got the answer!"

He jumped away from the Proxy-board without a further glance at that bank of intricate controls, and hurried down a corridor.

Through the glass doors he passed, Norris could see the other operators at work. Each sat in front of his control-board, wearing his television helmet, flipping the switches with expert precision. Each was operating a mechanical Proxy somewhere on Mercury.

Norris and all these other operators had been trained together when Kincaid started the Proxy Project. They had been proud of their positions, until recently. It *was* a vitally important job, searching out the uranium so sorely needed for Earth's atomic power supply.

The uranium and allied metals of Earth had years ago been ransacked and used up. There was little on Venus or Mars. Mercury had much of the precious metal in its cavernous interior. But no man, no matter how ingenious his protection, could live long enough on the terrible, semi-molten Hot Side of Mercury to conduct mining operations.

That was why Kincaid had invented the Proxies. They were machines that could mine uranium where men couldn't go. Crewless ships guided by radar took the Proxies to the Base on Mercury's sunward side. From Base, each Proxy was guided by an Earth operator down into the hot fissures to find and mine the vital radioactive element. The scheme had worked well, until—

"Until we got into those deeper fissures with the Proxies," Doug Norris thought. "Seven wrecked since then! This *must* be the answer!"

Martin Kincaid looked up sharply as Norris entered his office. A look of faint dismay came on Kincaid's square, patient face. He knew that a Proxy operator wouldn't leave his board in the middle of a shift, unless there was trouble.

"Go ahead and give me the bad news, Doug," he said wearily.

"Proxy M-Fifty just blacked out on me, down in Fissure Four," Norris admitted. "Just like the others. But I think I know why, now!" He continued excitedly: "Mart, seven Proxies blacking out in two weeks wasn't just accident. It was done deliberately!"

Kincaid stared. "You mean that Hurriman's bunch is somehow sabotaging our Project?"

Doug Norris interrupted with a denial. "Not that. Hurriman and his fellow politicians merely want to get their hands on the Proxy Project, not to destroy it."

"Then who did wreck our Proxies?" Kincaid demanded.

Norris answered excitedly. "I believe we've run into living creatures in those depths, and they're attacking us."

Kincaid grunted. "The temperature in those fissures is about four hundred degrees Centigrade, the same as Mercury's sunward side. Life can't exist in heat like that. I suggest you take a rest."

"I know all that," Norris said impatiently. "But suppose we've run into a new kind of life there—one based on radioactive matter? Biologists have speculated on it more than once. Theoretically, creatures of radioactive matter could exist, drawing their energies not from chemical metabolism as we do, but from the continuous process of radioactive disintegration."

"Theoretically, the sky is a big roof with holes in it that are stars," growled Kincaid. "It depends on whose theory you believe."

"Every time a Proxy has blacked out down there, there's been little clouds of heavy radioactive gas near," argued Doug Norris. "Each seems to have a denser core. Suppose that core is an unknown radium compound, evolved into some kind of neuronic structure that is able to receive and remember stimuli? A sort of queer, radioactive brain?

"If that's so, and biologists have said it's possible, the *body* of the creature consists of radon gas emanated from the radium core. You remember the half-life of radon exactly equals the rate of its emission from radium, so there'd be a constant equilibrium of the thing's gaseous body, analogous to our blood circulation. Given Mercury's conditions, it's no more impossible than a jellyfish or a man here on Earth!"

KINCAID looked skeptical.

"And you think these hypothetical living Raddies of yours are attacking our Proxies? Why would they?"

"If they have cognition and correlation faculties they might be irritated by the tube emanations from the control-boxes of our Proxies," Norris suggested. "They get into those control-boxes and wreck the tube circuits by overloading the electron flow with their own Beta radiation!"

"It's all pretty far-fetched," muttered his superior. "Radioactive life! But all those Proxies blowing can't be just chance." He paused, then added gloomily, "But I can just see myself telling a World Council committee that your hypothetical living Raddies are what keep us from delivering uranium! Hurriman would like that. It would convince the Council that I'm as incompetent as he claims."

"He'll convince the Council of that anyway unless we deliver uranium from Mercury quickly," retorted Norris. "And we'll never do it till we get these Raddies licked. They're basically just complex clouds of radioactive gas. A Proxy armed with a high-pressure gas hose should be able to blow them to rags. Can't we try it, Mart?"

Kincaid sighed, and stood up.

"I was a practical man once," he said wearily, "and would have booted you out of here if you'd suggested such stuff. But I'm a drowning man right now, so I'll buy your straw. We'll send down a couple of Proxies armed with gas hoses and see how they make out."

Doug Norris eagerly went with his superior into the adjoining room where the operators of the Base Proxies were on duty.

"Norris and I will take over two Proxies at base," Kincaid told the sub-chief there.

Two operators took off their helmets and got out of their chairs. Norris took the place of one, donning the television helmet.

The control and television beams were on. The compact kinescope tubes in his helmet gave him a clear vision of the Base on Mercury, as seen through his Proxy's iconoscope "eyes".

There were no buildings, for Proxies didn't need shelter. The seared black rocks stretched under a brazen sky, beneath a stupendous Sun whose blaze even the iconoscope filters couldn't cut down much. The Base was just a flat area here beside the low rock hills. A crewless ship lay to one side, its hatches open. Near it were the supply-dumps of Proxy parts, the repair shops, the power plant.

"We'll get a couple of oxygen tanks from the supply dump and use them for your gas hose weapons," Kincaid was saying.

The Proxies they were guiding did not look like men. They looked like what they were—machines devised for special purposes. They were like baby tanks, mounted on caterpillar drives, each with two big jointed arms ending in claws, and a control-box with iconoscope eyes. They clamped on the high-pressure oxygen tanks, clutched the nozzles of the attached hoses, and rolled out of Base across the seared plain toward the black rock

hills. In a few minutes, they entered the narrow cleft of Fissure Four.

Norris knew the way down here. He led, switching on his searchlight even though he didn't really need it. The Proxy's iconoscope eyes could see by the infra-red radiation from the superheated rock walls.

They finally reached the spot deep down in the fissure where his disabled former Proxy still stood. Doug Norris reached his jointed arms and quickly unclamped the shield of its control-box.

"Look there, Mart! The whole controls shot! They do it by overloading the tubes with their own Beta emanations, all right."

Kincaid's Proxy had elbowed close, its big iconoscope eyes peering closely. Here in the office, Kincaid uttered a grunt.

"That still doesn't prove the gas that did it was living. Instead of your hypothetical Raddies, it could be—"

"Look there!" yelled Doug Norris suddenly. "There they come again!"

Three of the glowing gaseous things were flowing toward them along the fissure. They poised for a moment in a lifelike way, and then swept forward.

"Your gas hose!" yelled Norris to the man beside him. "Don't let them get near you!"

The Raddies were advancing in a deliberate way. In spite of the time-lag, Norris tried to raise his gas hose and trigger it. There wasn't time. The eight-minute lag between his action and the result out there on Mercury was fatally long. The glowing Raddies were flowing up around the Proxies.

Doug Norris was momentarily dazzled by the brilliance of the Raddy that enveloped his Proxy's control-box. It was like looking into a star to look into the glowing, pulsing core of the thing.

His senses reeled queerly as he stared, hypnotized by the swirling bright gas and the starlike, throbbing core. He sensed dimly that that core was a kind of life possible on no terrestrial planet, a crystalized gaseous neurone structure that used its own radon emanations as a body.

HE FELT his senses staggering, darkening. It was as though he were hypnotized by the brilliance of that pulsing core of light, as though it were probing excruciatingly into his brain.

Then Doug Norris came out of his queer daze to find himself sitting there with his helmet dead. He could see nothing. His movements of the Proxy controls yielded no response.

"Blacked out, both our Proxies!" Kincaid exclaimed, dazedly taking off his own helmet. "And we got some kind of kick-back shock."

Norris, still badly shaken, nodded unsteadily. "There must have been a kick-back along the control beam when they blew the control-boxes. The circuit breakers may have been slow." He added quickly, "But you know now I was right! Those Raddies are living things, that instinctively attack our Proxies!"

Kincaid frowned. "It looks like it. But no gas hose or any other weapon will work against the brutes. The time-lag makes it impossible to use weapons. Our only chance is to seal and ray-proof the Proxies' control-boxes against them. That'll take time. But it's our only chance to get uranium out of there, and it's got to be done before Hurriman's clique gets the Council on our tail. I'll have the boys bring the Proxies all back to Base at once."

Norris followed his chief back to his office. Winters, the office clerk, was waiting there for them, and looking anxious.

"A bulletin just came over the news tape, Chief," he told Kincaid. "Here it is."

Mart Kincaid read the tape, and his square shoulders seemed to sag a little. He looked at them heavily.

"We won't need to worry any more about your Raddies, Doug. World Council has just passed Hurriman's motion requesting an immediate investigation of Proxy Project. It will begin tomorrow." He added tonelessly, "You know what that means. When they find we've lost nine valuable Proxies out there on Mercury without getting any uranium at all yet, we'll be thrown out."

"Blast Hurriman!" Doug Norris raged. "The Proxy Project has been your work from the start! You sweated to develop the things. Now because there's a hitch, a bunch of bumbling politicians take it over!"

"It's all in a lifetime," Kincaid shrugged. "Winters, you tell the boys. Have them pull their Proxies back to Base, and go home." He sat down slowly in his chair then, and stared at the wall. "So it's over. Well, right now I'm too tired to care."

Norris felt heartsick. "Isn't there any chance of stalling them long enough to try our idea of rayproofing the Proxies?"

"You know there isn't," said his superior. "It'd take days to do that job. Even if it

worked against the Raddies, it'd take weeks more to get out uranium. And Hurriman's bunch won't wait weeks."

He looked at the sick face of the younger man, then opened a desk drawer and took out a bottle of Scotch and glasses.

"Here, have a drink," he ordered. "You're a little young yet, and you take these things too seriously."

Norris unhappily drank the Scotch. But his nerves, still shaken by that queer kick-back shock from the beam, didn't relax much.

"Mart, your calmness isn't fooling me," he said. "I know how much the Proxies meant to you, the dreams you had of operating Proxies on every planet man couldn't visit, even on worlds of distant stars."

Kincaid shrugged as he poured himself a drink. "Sure, I wanted all that. But since when have scientists ever been able to buck politicians?"

Darkness pressed the windows as night gathered. They sat silently in the darkening office drinking the Scotch and looking at the tall, lighted stacks of the distant New York Power Station.

Doug Norris found no comfort in the liquor's sting. His sense of injustice deepened. The Proxies were Kincaid's, but just because he couldn't produce uranium fast enough, they would be taken away from him.

He said so, bitterly and at length. Kincaid only shrugged wearily again.

"Forget it, Doug. Have another drink."

Norris discovered with mild surprise that the bottle was empty.

"We must have spilled some of it," he said a little thickly.

"There's another bottle in the drawer," Kincaid grunted. "They were for the Project party next week, but that's all off now."

NORRIS opened the other bottle and generously refilled their glasses. He sat down beside Kincaid, who was looking broodingly from the window at the distant atomic power plant. Despite the warm physical glow he felt, Doug Norris was unhappier than before. A new, poignant sorrow had risen in him.

"You know, Mart, it isn't only what Hurriman's doing to the Project that's got me down," he said sorrowfully. "It's what happened to old M-Fifty today."

"M-Fifty?" Kincaid inquired. "You mean that Proxy you lost this afternoon?"

"Yes, he was my special Proxy for all these months," Doug Norris said. "I got to know him. He was always dependable, never jumped his control beam, never acted cranky in a tight place." His voice choked a little. "I loved that Proxy like a brother. And I let him down. I let those Raddies wreck him."

"They'll fix him up, Doug," said Kincaid, a rich sympathy in his slightly thickened voice. "They'll make him as good as new when they get him back up to Base."

"Yes, but what good will that do if I'm not here to operate him?" cried Norris. "I tell you, that Proxy was sensitive. He knew my touch on the controls. That Proxy would have died for me."

"Sure he would." Kincaid nodded with owlish understanding. "Here, have another drink, Doug."

"I've had enough," Norris said gloomily, refilling their glasses as he spoke. "But as I was saying, that Proxy won't run for a bunch of politicians and their ham-handed operators like he ran for me. He'll know that I'm gone, and he won't be the same. He'll pine."

"That's the way it goes, Doug," Kincaid said sadly. "You lose your best friend—I mean, your best Proxy—and I lose my Project, just because we can't furnish enough uranium for power over there."

He gestured bitterly toward the distant stacks of New York Power Station that soared like towers of light in the distant darkness.

"You know, I've got an idea in my mind about that," Kincaid added slowly, as he stared at those towers.

Doug Norris nodded emphatically. "You're dead right, Mart. You're absolutely right."

"Now wait, you didn't hear my idea yet," Kincaid protested a little foggily. "It's this —we're losing the Project because we can't furnish enough uranium for power. But suppose they didn't need uranium for power any longer? Then they'd let us keep the Proxy Project!"

"Exactly what *I* say!" Norris declared firmly. "There's just one thing for us to do. That's to find a way to produce atomic power from some commoner substance than uranium. That'd solve our whole problem."

"I thought I was the one who said that," Kincaid said, puzzled. "But look—what fairly common metal could be used to replace uranium in the atomic piles?"

"Bismuth, of course," Norris replied promptly. "Its atomic number is closest to

the radioactive series of elements."

"You took the words right out of my mouth!" Kincaid declared. "Bismuth it is. All we have to do is to make bismuth work in an atomic pile, then we can run the Proxy Project without this everlasting nagging about supplying uranium."

Doug Norris felt a warm, happy relief. "Why, it's simple! We should have thought of it before! Let's get some bismuth out of the supply room and go over to the Power Station right now!" He leaped to his feet, eagerly, if a trifle unsteadily. "No time to waste, if the Council committee's to be on our necks tomorrow!"

Doug Norris felt like singing in his wonderful relief, as he and Kincaid went down through the now deserted Project building to the supply room. In fact, he started to raise his voice in a ribald ballad about a Proxy's adventure with a lady automaton.

"You mus' have had a trifle too much Scotch, Doug," Kincaid reproved him, with owlish dignity. "Such levity isn't becoming to two scientists about to make the mos' wonderful invention of the century."

They got one of the heavy leaden cylinders used for transport of uranium and filled it carefully with powdered bismuth. Then, in Kincaid's car, they drove happily toward the big Power Station.

The guards at the barrier gate knew them both, for it was nothing new for Proxy Project men to bring uranium over to the Station. They let them through, and the car eased along the straight cement road.

The huge, windowless buildings that housed the massive uranium piles were a mile beyond. But no one went near those tremendous atomic piles. Everything in them had to be handled by remote control by the few technicians in Headquarters Building who kept them operating.

"Mart, isn't it queer nobody ever thought of usin' bismuth instead of uranium, before now?" Norris asked, out of his roseate glow.

"Scientists too c'nservative, that's the trouble," Kincaid answered wisely. His voice soared. "We're about to launch a new epoch! No more uranium shortage to worry 'bout! No more politicians botherin' the Project!"

"And I'll be able to fix up old M-Fifty and run him myself again," added Doug Norris. He choked up once more. "When I think of that Proxy that was like a brother to me, lyin' down in that lonely fissure with the Raddies gloatin' over him—"

"Don't think about it, Doug," begged Kincaid, with tender sympathy. "Soon's we get these atomic piles changed around, we'll go back and get good old M-Fifty up again and fix him good as new."

THAT promise cheered Norris' grieving mind. He got out and helped Kincaid carry the heavy lead cylinder into Headquarters Building.

The technicians they passed in the lower rooms saw nothing surprising in the two Project men staggering along under the weight of the cylinder. Nor did Petersen and Thorpe, at first.

Petersen and Thorpe were the two technicians on duty in the big, sacred inmost chamber of controls. Visors here gave view of every part of the distant, mighty atomic piles—the massive lead towers that enclosed the graphite and uranium lattices, the gas penstocks that led to giant heat turbines, the gauges and meters. And the banks of heavy levers here could switch those lattices, make any desired change in the piles, without the necessity of a man entering the zone of dangerous radiation.

Petersen had surprise on his spectacled, scholarly face as he greeted the two scientists.

"I didn't know you had another uranium consignment for us," he said.

Kincaid helped Norris place the lead cylinder in the breech of the tube that would carry it mechanically to the distant pile.

"This isn't uranium—it's better than uranium," Kincaid announced impressively.

"What do you mean, better than uranium?" Petersen asked in a puzzled tone. He opened the end of the lead cylinder. "Why, this stuff is bismuth! What is this, a crazy joke?"

Young Thorpe had been staring closely at Kincaid and Norris.

"They're both plastered!" he burst out.

Kincaid drew himself up in an unsteady attitude of outraged dignity.

"Tha's what thanks we get," he accused thickly. "We come here to make a won'erful improvement in your blasted old atomic piles, and we get insulted."

"Thorpe," Petersen said disgustedly, "get them out of here, and . . . *Look out!*"

Doug Norris had casually taken the heavy metal handle off one of the big levers. He tapped Thorpe on the head with it just as Petersen uttered his warning cry. The young

technician slumped.

Petersen, suddenly pale, darted toward an alarm button on his desk. But before he reached it, Norris' improvised blackjack tapped his skull. And Petersen also sagged to the floor.

Norris looked triumphantly at Kincaid, with a warm feeling of righteous virtue.

"They won't bother us now, Mart. I just put them out for a little while without hurting 'em."

"Quick thinking, Doug!" Kincaid approved warmly. "Can't let reactionaries obstruc' course of scientific progress. We'd better tie 'em up in case they come around too soon."

Norris helped tie the two unconscious men with lengths of spare cable. Then he and Kincaid stood swaying a little as they owlishly inspected the controls of the mighty atomic piles.

Norris knew a good bit about those controls. He had been here many times, and Petersen and the other technicians had liked to talk. The trouble was, that right now his thoughts all seemed a little foggy.

"What we got to do," Kincaid said ponderously, "is change 'round the atomic pile setup so it'll handle bismuth instead of uranium. Right?"

"Right!" Norris approved enthusiastically. "That's going right to the heart of the problem, old pal!"

Kincaid seemed to blush in deprecation. "Oh, I jus' got an orderly mind. First thing now, is to shift the uranium lattices out of the piles."

He laid his hands on several of the levers, one after another. There was a low humming of machinery somewhere.

In the distant, towering structure, lattices loaded with uranium were being mechanically withdrawn to the pits beneath. But there was nothing happening here except on the panel of indicators.

Petersen came back to consciousness at that moment. Tied to a wall stanchion, he stiffened and his eyes bugged at them.

"What are you two doing?" he cried. "You're cutting off the power by pulling out those lattices!"

"Only temp'rarily," Norris assured him. "We'll shift empty lattices back in, and then load the bismuth into them."

Petersen uttered a howl of agony. "You maniacs will wreck the whole pile if you try a stunt like that! For heaven's sake, sober up and think what you're doing!"

"We're tryin' to think," Kincaid said sternly. "But how can we co'centrate, with you yelling at us?"

Petersen went from raging orders to agonized pleadings to tearful entreaty. The two ignored him completely.

"Le's see, now," Kincaid said, blinking. "We'll leave in the Number One uranium lattice after all. We'll need its neutrons to trigger the expanding series of graphite and bismuth lattices."

"We'll need *two* uranium lattices," Doug Norris corrected thickly. "One to trigger the first action, the other to pr'vide neutrons for the continuous shuttle that'll run the bismuth's atomic number up from eighty-three to ninety-four, right up through neptunium to plutonium."

"You're right," Kincaid agreed, hiccuping slightly. "I forgot 'bout that second lattice for a minute. Mus' be because of all the noise in here."

PETERSEN was still producing that noise, indeed. He had become louder and more frantic as he saw them shifting out the uranium lattices and replacing them clumsily with empty lattice-frames.

"Ten thousand scientists have been working ever since Nineteen-forty-five to find a way to use common elements instead of uranium in a pile!" he choked. "They can't do it. But two drunken Proxy men are going to try it!"

Norris hardly heard that stream of agonized accusation and entreaty, as he helped Kincaid shift in the empty lattices. He was mildly sorry that Petersen felt so disturbed. There was no reason for it. He and Kincaid knew just what they were doing.

Or did they? For a moment, a dim doubt crossed Norris' foggy mind. After all, he and Kincaid weren't physicists. Then he dismissed that doubt. He was *sure* of what they were doing, wasn't he?

Kincaid sat down unsteadily when they had the lattices changed.

"I feel a li'l shaky. 'S emotional reaction from great scientific achievement."

"Emotional reaction nothing—you're so plastered you're nearly out!" raged Petersen.

Kincaid dignifiedly ignored that. "Switch on the loader and shoot the ol' bismuth in there, Doug."

"Norris, *don't* do it!" begged Petersen hoarsely. "It means wrecking the pile, and maybe blowing up the whole Station!"

Again, Doug Norris' dim doubt bothered him. But then again he dismissed it. Everything was so beautifully clear in his mind. It had to work.

He switched on the loader. The lead cylinder of bismuth slid away into the tube that would carry it to the pile, where it would be automatically loaded into the new empty lattices.

"You fools!" choked Petersen. "I hope they hang you both for this! When that pile starts up, and blows—"

The operation of the great atomic pile was automatic from this point on. Minutes later, a bell rang and indicators clicked on.

"First uranium lattice has triggered off," said Kincaid, and nodded, pleased. "Now we'll get power—lotsa power."

"You'll get nothing but maybe an atomic explosion, in ten seconds!" cried Petersen, his face deathly white.

Doug Norris suddenly felt his doubt rise again and this time it overwhelmed him! All his former foggy confidence seemed to have left him as they completed their operations.

He was suddenly aware of the mad and ghastly thing that he and Kincaid had done. Why in heaven's name had they done it? What crazy quirk in their minds had made them do it?

Kincaid too was suddenly looking pale and queer.

"Doug, maybe we shouldn't have tried it."

"Look at those meters!" yelled Petersen, in a wild voice.

The technician's eyes were protruding as he stared at the big bank of ammeters that registered the output of the great turbines. The needles were jumping across the dials with swiftly increasing amperage.

"The pile is *working!*" yelled Petersen hoarsely. "That bismuth is actually producing atomic power!"

Doug Norris suddenly felt cold sober, and a little sick. He sat down shakily, and put his head in his hands.

Kincaid was staring blankly at the ammeters, while Petersen and Thorpe seemed to have gone crazy with excitement. When Petersen was untied, he grabbed Kincaid fiercely.

"How did you do it?" he cried. "Just what did you do to the pile?"

Kincaid stared at him blankly. "I don't know, now."

"You don't know?" Petersen almost screeched. "Man. you've stumbled on what the scientists have been hunting all these years—the hookup to use common elements in an atomic pile! You must have had something figured out beforehand!"

"We didn't!" Norris denied weakly. "We got a little plastered, and got this idea. We didn't know what we were doing."

Suddenly, Doug Norris stiffened. Remembrance that brought him jumping unsteadily to his feet had come to him.

"You couldn't have done a thing like this by sheer crazy accident!" Petersen was insisting. "You must have known how!"

"By heaven, I believe now that we *did* know what we were doing, in a queer sort of way!" Norris exclaimed shakily. He grabbed Kincaid's arm. "Mart, come with me! We're going back over to the Project!"

Petersen's dazed amazement was changing to exultation.

"Whatever you did, it's still working and looks like it'll work indefinitely! And we can study the hookup and learn how to duplicate it, even if we never completely understand it. You two maniacs are going to be famous!"

But Norris had already led the stupefied Kincaid out of the room.

ALL the way back to the Proxy Project, Kincaid kept dazedly repeating the same thing over and over.

"We must have been clear out of our heads to do a thing like that! But how is it that we were able to do it *right?*"

"Haven't you suspected the answer to that yet?" cried Doug Norris. "Don't you see why, as soon as our conscious minds were relaxed by a few drinks, we automatically went and performed an operation totally beyond present-day nuclear science? What happened to us just before we had those drinks? What happened when our Proxies

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met those Raddies down in the fissure?"

"The Raddies?" Kincaid repeated stupidly. "What could those brutes have to do with this?"

"We thought they were only brutes, a low form of queer radio-active life," Norris said. "But what if their weird minds are intelligent, supremely intelligent? An intelligence that doesn't operate for purposes or in ways like ours, but that's as high or higher than ours?"

He almost dragged the stunned Kincaid into the deserted office, to the control-boards of the Proxies at Base.

"Take over a Proxy and follow me," Norris ordered. "I've an idea that if we go down in that fissure again, we can prove it."

"Prove what?" Kincaid asked, but mechanically obeyed and took over a Proxy control.

Again, Norris and Kincaid guided their Proxies out of Base and across the seared Mercury plain toward Fissure Four. Norris peered down into the fissure as he advanced Then as they glimpsed the wrecked Proxies they had previously left there, they also glimpsed glowing little clouds flowing rapidly toward them.

A Raddy lifted its glowing gaseous body to envelop the control-box of Norris' Proxy. Again, as he stared into the thing's brilliant, pulsing core, he felt his senses reel queerly. But this time, he knew beyond any doubt what it was.

"Hypnosis!" he yelled to Kincaid. "Hypnosis operating through our Proxies' eyes right back along the beam to our own eyes and brains! I thought so!" His shout died away as his brain reeled under the powerful hypnotic influence of the Raddy's pulsing, starlike core.

Hypnosis could operate by vision, everyone knew that. Nobody had dreamed of hypnosis operating across space by means of a linking television beam, but it was happening. For Doug Norris, resisting now with new-found knowledge, just dimly sensed the powerful hypnotic order the Raddy's pulsing brain was hurling into his own mind.

"You will not send your crude machines down here again to disturb our philosophical reveries!" the Raddy's hypnotic thought was sternly ordering him. "There is no further need. When we read from your minds that it was need for uranium for your primitive power plants that motivated your intrusions here, we gave your brains the post-hypnotic knowledge to improve those power plants so you would not need to come here again. So go, and do not return!"

Under that powerful hypnotic command, both Norris and Kincaid turned their Proxies and fled back up the fissure.

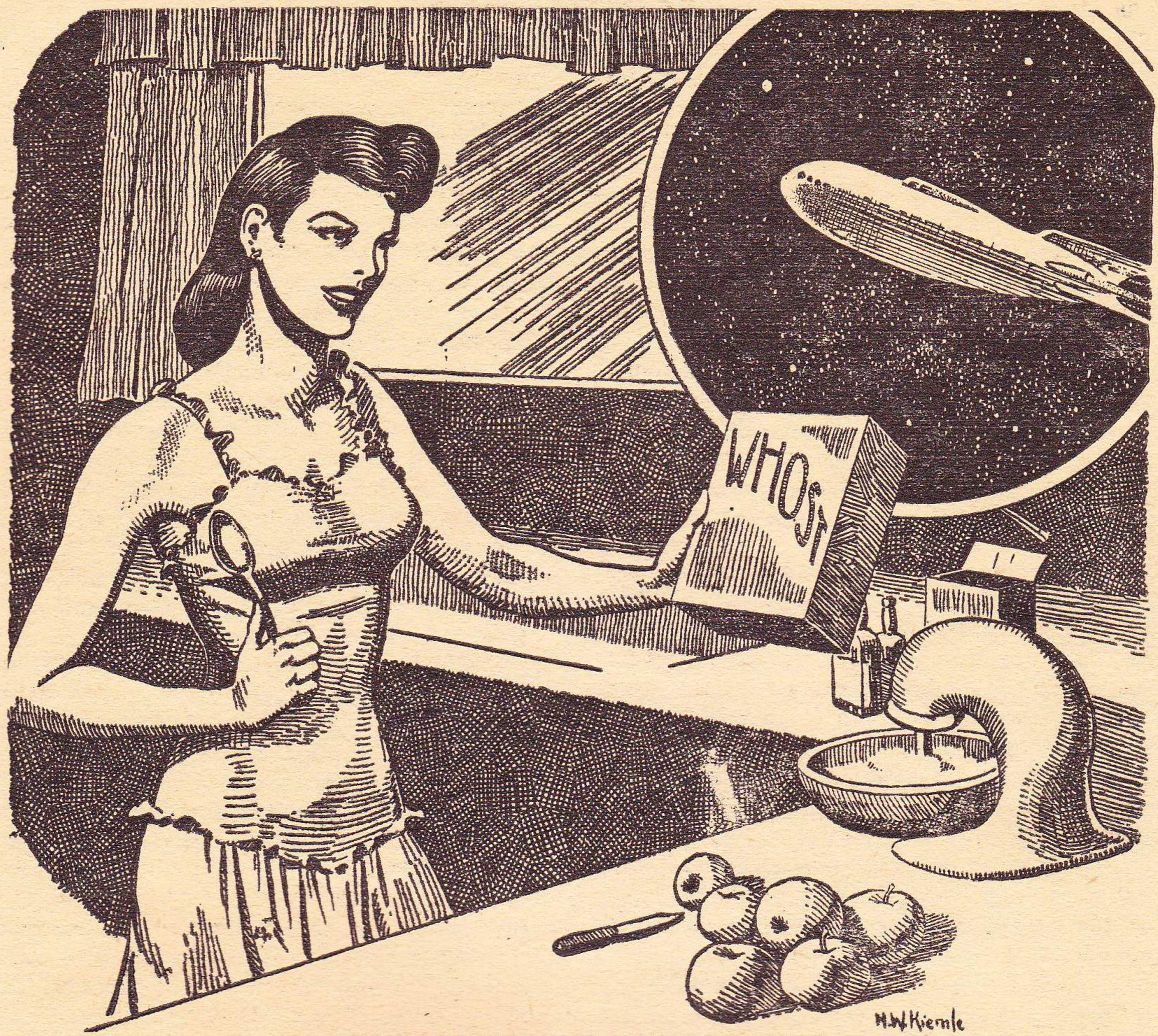
Not until they had reached Base again, not until they had ripped off the television helmets, did Doug Norris feel that powerful hypnotic command relax.

"It's as I suspected!" he cried. "It was the Raddies who put that knowledge in our minds! Who would know nuclear science better than they?"

Kincaid stared, his jaw dropping. "Then, to stop our bothering them, they did that by post-hypnotic command working back along our own Proxy-beams?"

"Yes!" cried Doug Norris. "Ironic, isn't it? They worked back along our own beams and made Proxies out of *us!*"

A wave of rebellion and suicide follows in the wake of the uncovering of an old shrine on the Sixth Moon of Jupiter in LODANA, a brilliant fantastic story by Carl Jacobi coming in the next issue—plus many other stories and features!



Oona began to put things into her largest mixing bowl

SUPER WHOST

By MARGARET ST. CLAIR

If you ever want a free trip to Mars, all you have to do is mix six slices of diced Super Whost with granulated sugar, chopped apples, golden syrup and—a large grain of salt

THERE'LL always be an ad-man. Oona, scanning the stereo, saw the 'caster's handsome profile fade discreetly into a panoramic view of Marsport at night.

"The city of perfumes." he said in a cadenced tenor. "Ten days of unoblivious wonderment in the heart of the luxury capital, with side deviations to the polar ice caps, the Purple Desert"—the view in the stereo shifted appropriately with his words—"and the System-famed wine district on the left bank of the Grand Canal, for yourself and a guest of your choice. That's the eximious first prize in the Super Whost contest.

"Why not compete? All you have to do is to send in an entry of not over two hundred words in length, accompanied by the seals

from ten family-sized pacs of Super Whost. Begin with the words, 'I prefer Super Whost at every repast because . . .' and then carry on with the reasons why you always opt Super Whost.

"Perhaps it's the high degree of tensile crispation, perhaps it's the sure effect of Super Whost on the salivary glands. Aggregate your reasons, whatever they may be, and send them in for the contest!

"The second prize in the Super Whost contest—Super Whost, the chronometrized carbohydrate—is a week on Mars, also at the Grande Hotel de Bellona, with two days' deviation to the wine district. Third prize is the latest edition all-Diesel 'copter put out by the Luffa Engine Company, complete with . . ."

Oona shut the stereo off. She wasn't interested in any prizes below the first two. A trip to Mars! Neither she nor Jick had ever been out of the earth's atmosphere, except once when Space Ports Inc., had entertained their employees with an all-day fourth-of-July picnic on one of the Space Rafts.

Oona hadn't really cared for it. They were up high enough to see the curvature of the earth, and it had been interesting to look down and watch the weather happening below, but the raft had been under a dome, of course, and something in the set-up had made Oona dizzy whenever she thought of it. She was sure it wasn't the same thing, not at all the same, as being on another planet.

She pulled the seals from the ten family-sized pacs of Super Whost toward her and studied them for inspiration. Why did she prefer Super Whost? Well, of course it was the most convenient stuff in the world, and it had rather a nice taste.

But the real reason she'd bought the ten pacs—there was an awful lot of Whost in them for just her and Jick to get through—had been to get the seals so she could enter the contest. But she could hardly give *that* as a reason.

After a few moments she drew the mouthpiece of the dicta-type toward her and began.

"I prefer Super Whost at every repast because . . ."

It was harder work than Oona had thought it would be. Her mind seemed to dry up when she tried to think of reasons for opting Super Whost. She spoiled five rekkablanks before she came out with an entry which pleased her.

It was really pretty good, she thought, reading it over. That phrase about "rich sapidity" sounded well, and so did that bit about the "deep luxurience of Super Whost's high tensile crispation."

And she'd finished with a ringing tribute to Super Whost's super-convenience for the super-busy modern woman. Darn it, she ought to get the second prize at least.

She stuck the ten seals in the envelope with her entry, ran it through the postage meter and slipped it into the teleport. There! Her entry was in the contest.

Jick would be home in a little while. It was time to think about supper. Before she got the bollo tongue out of the deep freeze and popped it into the tenderizer (they'd have taro roots with it, and some of those little mange-toute peas, and of course Whost), she opened the storage cabinets and looked at the Super Whost again.

WHAT a lot there was *of* it! She always tended to forget how big the pacs were when she wasn't looking at them. That wouldn't have bothered her at all, because Whost was nice to have on hand, but of course it was all chronometrized, and that meant that if you let the pacs go past the date stamped on them the Whost disintegrated.

Instead of coming out all hot and buttery and delicious (well, it did taste pretty good), you had nothing but a lot of crumbs, as tasteless as sawdust. All that Whost to eat up before May Seventeenth! That was a pac every four days.

Jick broke down on the third day.

"Listen, honey," he said, "isn't there anything in the system to eat besides Whost? Seems like we've had it at every repast for the last week.

"I know it's convenient for you and all that, but I'm getting so I hate the taste of it, and after I eat it I feel as if I'd swallowed helium-filled balloons mixed with slivers of corundum. How about having some rolls?"

Oona nodded. She had to admit that Jick was right; she'd barely been able to get down her own share of the Whost at lunch, and she'd given Jick more than herself because he was bigger than she.

It had been too much of a good thing. And even eating Whost strenuously the way they'd been doing, they had only finished two-thirds of the first box. She'd have to work out some other method of dealing with it.

At the meeting of her maroola club next afternoon, Oona was silent and distraught. She couldn't get her mind on the game. While the other girls drew loos, doubled and built their citadels, Oona looked blankly at her hand, seeing, instead of the brightly-colored hexagons, nine and one-third family-sized pacs of Super Whost.

She couldn't just put them in the garbage reducer. Whost, no matter what the makers said, was in the luxury price-group. It had cost too much to throw away. She could cut it up in little pieces and use it for stuffing lamb shoulder, she guessed, or—

"Double loo!" Neta Dubonet cried excitedly. "*And* whidget. That puts me out. My goodness, Oona, what's the matter with you? You're playing like you're asleep."

"I'm sorry," Oona replied with an effort. "I know I'm not playing very well."

"I should say not. Maybe you'll feel better after the refreshments—Jobella said she was trying a new recipe on us today."

"Um-hum," Oona answered vaguely. "Um-hum. Yes."

The refreshments, when they came, looked quite good. A mold of calavo, geela nut and fraisette, steaming hot theo, and—*what* was that? Oona poked cautiously with her fork at the pale-blue surface. That was spilal paste on top, but underneath—she might have known it—was Whost.

It almost took her appetite. She got down a few mouthfuls of the geela mold and drank her theo, but Jobella commented with some acerbity on how the new recipe hadn't made a hit with *everyone,* and Oona had to explain that she was slimming for her frontless swimming suit.

After the repast they played some more maroola, and then Jobella awarded the prizes.

"Neta has high score," she said, handing a little box to her (Oona thought it looked like a somni-spray case) "and poor Oona gets the consolation prize. Just a second."

Jobella went out of the room for a minute and returned lugging a huge box. With a sinking heart, Oona began to untie the big silver bow and strip off the iridescent nylo-wrap. It was, as she had feared, ten family-sized pacs of Super Whost.

IT WAS plain enough what had happened, Oona thought as she caught the air-bus. Jobella had entered the Whost contest (the seals were all gone from the pacs), and she'd decided that consolation prize for the maroola club was a good way of getting rid of all that Whost. It was expensive enough to make a good present, but gosh. *Gosh!*

Oona stored the new installment of Whost under the dishwashing unit and began to get supper. Once in awhile she looked toward the garbage reducer with a speculative eye. All she had to do was to pick up a pac of Whost and . . .

Jick chimed at the front door and Oona ran to let him in. "'Lo, honey," she said, embracing him warmly. "Have a good day?"

Jick looked at her. His usually good-tempered face seemed harassed.

"Not exactly," he replied. "You know that check pool we have on Fridays?"

"Um-hum."

"Well, I got a prize. First time in solar history I've won anything. You know what it was?"

"What?" Oona cried, facing him. For some reason, her heart had begun to pound.

"Ten of those beblasted pacs of Whost! That stuff! *Ten—pacs—of—Whost!* I brought it home, Oona, but if you want to put it in the garbage reducer, it's all right with me. I don't think I ever want any of it to eat." He shoved the box toward her and went into the shower room to depilate his face.

Oona now had twenty-nine and one-third family-sized pacs of Super Whost. May twenty-eighth was the latest date any of them was chronometrized for. Why not just put them in the reducer? They hadn't cost her anything.

Oona wavered. Then her jaw set. No, by golly, she wasn't going to throw them away. Jick's union was negotiating for a wage increase, but even if it went through those boxes of Super Whost represented darn near a week's wages.

She drew the seatette out of the wall in the kitchen and began to think. Crumbs for sautéing? Whost in chunks with gelatine? With geela and almond flavor, baked as a sort of imitation macaroon?

Next morning, as soon as she was through with breakfast, Oona set to work. She got out spices, sugars, eight or ten bottles of flavoring, an assortment of fresh and processed fruit, four kinds of flour and one of the pacs of Whost.

By late afternoon, she had used it in thirteen or fourteen things. Most of them had been messes, one or two had been reasonably zestful. She had discovered that

Whost went badly with meats or cheese and excellently with apples. On the basis of these facts, what procedure suggested itself?

Oona glanced at the dial—an hour and ten minutes until Jick would be home. She began to dump things into her largest mixing bowl, the one that had been through the dishwasher four times already that day, with nervous speed. In less than half an hour a wonderful aroma, rich, deep, and insinuating, had begun to diffuse itself through the house.

"Sump'n smells good," Jick said after he had kissed her. His arm still around her waist, he inhaled deeply. "Apple pie, hunh? Or maybe Deep Dish Golden Tart. Smells mighty zestful, whatever it is."

"It's just a little recipe I made up," Oona answered him. "I had some stuff I wanted to use. Gee, Jick, I hope it appeals."

It did.

"Is this all there is of it?" Jick demanded indignantly, after three helpings of Oona's concoction. He was picking up crumbs from his plate with the tines of his fork. "Make it again tomorrow night; make twice as much. I could eat it every night for a month. What's it got in it, honey? It's the best desert you ever made."

"Oh, apples and things. Lots of things."

Jick looked at her, frowning a little. After a moment he got up and brought the dictatype over to the table.

"Put it on a rekkablank right away, sugar," he advised. " 'Member that Frozen Delight you made, and then you forgot what went in it? Wouldn't want that to happen with this."

OBEDIENTLY, Oona began to talk into the machine. "Three cups of chopped apples, three-quarters cup of Demerara sugar, six slices diced Super Whost"—she saw Jick, on the other side of the table, raise his eyebrows slightly—"one quarter cup of golden syrup, one quarter teaspoon of salt. . . ."

"There *are* a lot of things in it," Jick said when she had finished. "I suppose the rum gives it that velvety taste. Or maybe it's the toasted almonds and the geela nuts. Anyhow . . . listen, baby, whyn't you send it in to BETTER REPASTS? Honest, it's a world-beater."

Oona wriggled a little. Jick was so prejudiced in her favor that he thought everything she did was wonderful. The recipé really wasn't extraordinary.

"Oh, I don't know," she said.

"You sure ought to send it in. It might win a prize or something. What's the name of it?"

"Unh—Apple Whee."

"Good name." Jick scrawled "Apple Whee" at the top of the rekkablank and laid it on the table. "And have it again tomorrow night, will you, kid? Have it lots of nights."

Now that Oona had the Super Whost off her mind, she began to enjoy planning the Martian trip. The first prize included a complete traveling-trousseau for the winner, and even the second prize offered a complete sports outfit and one for evening too.

But what about Jick? She'd be darned if she was going to go prancing up to the Grande Hotel de Bellona dressed like a stereo star and have him looking like a poor relation. Jick was not only the sweetest man in the solar system, he was darned good-looking with that deep chest and dark hair and everything. If he had some new clothes he'd look like a billion dollars.

She got out the savings-book and studied it. Darn. She saved hard on everything but somehow. . . .

Finally she video'd Berstein, her old boss, and within five minutes had agreed to work part-time for him, four days a week, from ten until three. Berstein had almost cried when she got married. The chronnox in the kitchen was a wedding gift from him and his wife.

Oona rang off with his loud, thankful hallelujas echoing in her ears. Ten to three wouldn't be bad—it would give her plenty of time to get home and make Apple Whee for Jick.

The days went by. They had Apple Whee at least three evenings a week and the savings-account began to fatten up. Oona took to spending her noon hour looking in the windows of the smarter men's shops.

According to MALE, VIRILE, and PRO HOMINE, very dark crimson evening clothes were coming into vogue this year and that color would be simply zestful on Jick. The pants baggy over the knees, she thought, tapering down into a deep, tight cuff with no lapels on the jacket.

Naturally, Jick would have to make the final decision himself. There was something too horrid about the sort of woman who picked out a man's clothes.

One thing she was sure of, Jick was going to get evening things. She bet with herself that every man in Marsport dressed for dinner without even thinking about it. Jick was as good as any of them—*Darling* Jick! They were going to have a fine time.

Some nights, of course, she found herself wishing he'd get tired of Apple Whee. Goodness knows, she was getting tired of making it. But she had used up thirteen of the family-sized pacs of Super Whost, and if Jick could stand it, so could she.

Maybe, after a while, they'd be able to eat Whost out of the pac again. The idea seemed a good deal less unpleasant than it had. And there was still a lot of Whost left.

It was on Friday, a little more than three weeks after Oona had gone back to work for Berstein, that Jick chimed so vigorously at the door Oona was afraid he'd break something.

"Golly, Jick," she said panting—she had run to let him in—"why all the speed? Is something the matter? Or were you afraid I'd eat up all the Apple Whee before you got home?"

"Apple Whee! *Ha!*" Jick roared at her. His face was flushed. "Is anything the matter! *Ha!* Woman, look at your mail!" He thrust an envelope at her. "It just came. Woman, look at your *mail!*"

Oona accepted it rather gingerly. It was a long, thin envelope, and it had obviously been ripped open in a hurry by Jick's forefinger.

"You opened my letter?" she said.

"You bet I did! You bet I did! So perish all tyrants! Don't stand there and hold it, Oona—look at it!"

HIS excitement was highly contagious. With trembling fingers Oona pulled the contents of the envelope out. Two pale blue pasteboard oblongs slipped through her unsteady hands and fluttered to the floor. His face one vast beam, Jick picked them up and handed them to her.

"Look," he said pointing, "see what it says?"

"S.S. Catena," Oona read, "First Class Passage, Round Trip, Greater New York to Marsport."

"See? What did I tell you?" Jick said.

Oona felt a stab of perplexity. She'd told Jick she thought she'd enter the Super Whost contest, and he'd said yes, it might be worth trying. What did he mean, what did I tell you? It had been her idea.

"Look at the rest of it!" Jick urged. Oona pulled out a long, flimsy strip of paper. "Marsport Hostel," she read, "is honored to inform you that a suite of rooms has been reserved in your name . . ." Marsport Hostel? But it had been the Grande Hotel de Bellona, hadn't it? What was all this?

"You haven't figured it out yet, have you, honey?" Jick said. Her confusion seemed to delight him enormously. "I knew you'd be surprised.

"I—what?"

"It's the Apple Whee," Jick explained at last, smiling vastly. "I sent the recipé into BETTER REPASTS, and you won the grand prize in the all-terra finals. I told you it was a world-beater, didn't I? Didn't I? Now will you believe me when I tell you you're a good cook?"

Oona nodded. She was too full of emotion to be able to speak. Grand prize in the BETTER REPASTS contest! Why, she hadn't even known they'd been having one. And if she had, she wouldn't have had the nerve to enter it. Usually they paid a dollar for every recipé they took, and they'd turned down the two she sent in last year.

"Would you like a glass of soma?" Jick asked. "Maybe the excitement's been too much for you. You look sort of pale."

"No, I'm all right," Oona replied absently. Two trips to Mars—heavens, what was she going to do with them? Maybe they could take one of them this year and save the other until Jick's next vacation. Or, if they wouldn't let her do that, Neta Dubonet and her husband would love to go.

Oona groped her way along the wall to the cushions of the pneumaport and sat down. Jick sat down too, put his arm around her waist and began talking about all the fun they could have on Mars.

"By the way, Jick," Oona said when he paused for breath, "did I get any other mail?"

"Unh? A post card or something." He fumbled in his pocket and produced a bill for the new eutex, a notice from the film library that WORLD OF ARLESIA had arrived and was being held until called for, and a letter from the manufacturers of Super Whost.

Oona was almost afraid to open it. In a way, it did seem a little improbable that she could have won another trip to Mars and yet, when she thought how hard she'd

worked on her contest entry and how much Whost she and Jiek had eaten up, she was sure she couldn't have taken anything less than second prize. It had been a darned good entry. At last she pulled the ribbon which unsealed the envelope and drew the enclosure out.

"Dear Contestant," Oona read, "the manufacturers of Super Whost, the chronometrized carbohydrate, take pleasure in informing you that your entry was placed forty-fifth in the recent Super Whost contest by the judges.

"Your prize goes forward to you today by prepaid air freight. We know that you, as a Super Whost enthusiast, will be as delighted by the prospect of receiving, free of charge, twenty family-sized pacs of delicious, high tensile crispation Super Whost as we are by sending them to you. . . ."

THE ETHER VIBRATES

(Continued from page 9)

printing more letters even if it does mean cutting some of the verbage out of 'em. It was nice to see Gwen Cunningham back again. I do get a kick out of her letters even if I don't agree with the contents. The letters are really improving, thank heavens, and I can read them and understand them without needing a dictionary of fan-slang, or what have you.

I see that I missed making some sort of comment on the pictures. Bergey's, yipes! Bergey didn't do the cover! I *thought* it was much better than his usual stuff. Except for the yellowish sky it's a darn good pic. Along with Alvin R. Brown, I too, long for a good blue sky. How about it?—*137 Eads Avenue, San Antonio 4, Texas.*

We remain on record as believeng THE SOMA RACKS an excellent story. Believe it or not, it did have a point to it, as anyone who has ever been afflicted with a handyman around the house, past, present or future, should discover. At any rate we are glad you liked Leinster's fine novel and did not agree with Dear Gwen. Nobody likes to be called a murderer, even ye ed.

UNFINISHED SYMPHONY

by Rosemary

My Dear Editor: Never, *never* have I been so very upset over a story no less. I was left dangling in midair and *darn* this Murray Leinster anyway!

The story?? Oh, good, super, solid, swell—*but*. . . . THE LAWS OF CHANCE was *not* finished. In the middle of nowhere he stopped! Why?

Frinstance—so Frances kissed Steve and they became man and wife—so what? Where and how did Lucky find his girl? Did these survivors build a colony? How many captives were bumped off? I could go on and on.

Honestly I've worried about the future of these people until I can't take it any more. I'll probably go into a raving dilemma one of these days and my husband will have to go on a diet for lack of a cook. May I add that, outside of all my ravings, this STARTLING book is terrific!—*432½ East 8th Street, Oklahoma City, Oklahoma.*

Dear heaven, Rosemary, at least Frances and Steve had themselves a preacher marriage—think of the future social structure if they hadn't! Or why not think about it? Lucky's probe gave indication that the girl he was after was among the released prisoners in the liberated base. And naturally the idea was to rebuild the conquered territory as rapidly as possible. All of these answers are available on the right-hand column of page 65, March, 1947, issue. The bump-off total has not been released due to reasons of military security or something.

Back to the range, Rosemary.

VERGER VIBRATES

by K. Martin Carlson

Dear Editor: For some time I have been on the verge of typing out a letter to *Startling Stories*, but never took the time to do so.

Now, I've finally done the deed. I want to put in my 2c worth of praise for "THE HALL OF FAME". May it ever burn brightly. Please carry on with the old Classics. WHEN PLANETS CLASHED was another very good novelet by Wellman. I don't recall ever having read it before, and I've been reading stf since 1921. Yes, I've read STARTLING and many of the others ever since the first issue.

In the arguments about the best artists, let me recommend Virgil Finlay. Any fan want a folio of his illustrations? Thanks for your kind review of my KAY-MAR TRADER. I'm glad you don't praise overly much. Give it right from the shoulder. We fans think better of you for it.

I like to read your comments on each letter. Your letter section is half the fun of getting STARTLING and it is the first place I turn to, when I open it up.—*1028 3rd Avenue South, Moorhead, Minnesota.*

Thanks. We're glad to learn that at least one old timer thinks we are still on the radar beam. We like Finlay too—along with Stevens. They make a grand pair of artists and we wish we could latch onto more of their work. However, both are doing plenty for SS and TWS nowadays, so their appearances will come with increasing frequency.

TIME TO RIPOSTE

by Norm Storer

Dear Editor: In spite of the fact that I may be verbally dissected after entering the portals of TEV, I shall still write to you. Mainly to compliment you on a durn good ish.

Yeah, that Leinster yarn really hit the spot. And Belarski adds immeasurably to the outside appearance. On the whole a very pleasing cover.

The inside pics, too, are welcomed after all those issues with just Marchioni for the lead story. And who did the pic for "When Planets Clash"? Fair. Just one criticism on Finlay . . . . why the professional fencing pose on page 13? *That* was certainly no place for it.

Choice of stories in a hurry, so's I can get on to TEV:

(1) "The Laws of Chance". (2) "When Planets Clashed". (3) "The Soma Racks". (4) "Stellar Snowball."

That was a ghastly thing you did when you cut Chaddo's letter. Why, the very soul of TEV is usually contained in his fine missives, and you go and cut it out. There wasn't enuf left for one to barely chuckle. Shame, Sargeant, shame! But Berry is left in better shape, and his unique style somewhat makes up for the absence of Oliver. Even JoKe is in his usual high-and-zany spirits and is left to graze undisturbed o'er the ill-fated Fall SS. This must be quite a blow to Chad's pride.—*1724 Mississippi Street, Lawrence, Kansas.*

Dissection now under way. The inside story on Marchioni is that our art editor likes the way he draws zany machinery. At that, he does it better than most of the others. Hereafter, however, we shall run fencing poses only on page 26, which should make them twice as good.

Chad's letter did take a brutal slicing—probably because we ran it first while our energies and intentions were still intact. But we are still searching (with doughnut gun in hand) for the proof or copy reader who changed Tungsten from a nobel equine to a much lower genus.

We didn't do it on purpose, Chad, really we didn't. So come on back to the fold.

IN A FEW WORDS . . .
by Michael Wigodsky

Dear Editor: For the March issue of Startling Stories, congratulations.

THE LAWS OF CHANCE was excellent.

WHEN PLANETS CLASHED would have been all right if it had been a new story, but since it was a so called Classic it didn't quite make it. *Is this the best Science Fiction has produced in the past?*

THE SOMA RACKS was wonderful.

STELLAR SNOWBALL was so-so.

Iluustrations:

Cover: Belarski is worse than Bergey.
13: Wonderful.
15: "
19: "
65: Terrible.
70-71: "
88: "

Letters; pretty good. *Who is Eando Binder?*

All in all, a pretty good issue. Once more, congratulations.—*306 Evans Avenue, San Antonio, Texas.*

Thanks for all those congratulations, Michael, and especially for liking and understanding THE SOMA RACKS. It seems to have puzzled a number of fans—who are not apparently accustomed to futureworld domestic yarns with a dash of humor. Personally we think they constitute the innovation of the year in stf and are glad to report more Oona and Jick stories on the way.

We shall forbear from comment on your comment anent the illustrations. But as for Eando Binder—that is a long story. There once were three brothers, it seems, Earl, Otto and Jack Binder. Earl and Otto (Eando —get it?) collaborated on stories while Jack was an artist who did many stf features for the old THRILLING WONDER.

Jack became a comics artist ultimately and Earl eventually dropped out of the writing collaboration. Most of the stories that have won undying stf fame for Eando were done by Otto on his own—although he kept the byline as was. For a number of years he has been turning out other material than science fiction yarns—which was a definite and sorely felt loss to the field. Now he's coming back—this time under his own name, Otto Binder. Have you read "The Ring Bonanza" on page 57 of this issue?

Once more, thanks for the congratulations.

STRIFE FROM DELLROSE
by Telis Streiff

Dear Editor: Why do you persist in ruining your otherwise nice magazine by the use of Marchioni's pics? The initiation of Finlay's super pics is an amiable move, to be sure, and I hope you keep him coming but that other artist . . . I can do better than *that!*

Now to the March issue; arggg . . . no Bergey! Belarski . . . the greater of two evils. Give us an old fashioned bem sometime . . . even a LAM or a BTM would do.

THE LAWS OF CHANCE: another Startling hit . . . you must be getting better. WHEN PLANETS CLASHED: I'm just curious . . . who asked for that to be reprinted? it *was* good . . . even for its age.

THE SOMA RACKS: coff coff . . . I think I'll send you "It happened one night" again . . . I see you're in the mood for that type.

STELLAR SNOWBALL: even if it had been good I wouldn't have liked it because of the M. pic.

Altho I will go along with the killing off of the Sarge, why must you kill off TEV too? I would much rather see the letters of chad, joe, etc., in toto than my own inane burbling in condensed form.

The real reason I wrote this letter is that we Wichita Fans have formed the Wichita Science Fiction Society and would like to invite all Fans around Wichita that can come to drop me a line and get details. We have about ten active members right now and would like to really get things going.—*548 North Dellrose, Wichita 6, Kansas.*

Re your first paragraph, in the words of the immortal Spivy, why don't you? If TEV is dead, how come the increase of letters (truly astonishing, running as it does at least 300% of the average wartime issue)? We like to run Chad and JoKe too—when they write, despite the shearing on Chad in the March issue.

Good luck to your fansociety. How active do your members get?

NOT IN HASTE BUT—
by R. R. Anger

Dear Editor:

(a) The Laws of Chance was up to Leinster's best standards (I can't think of higher praise.)

(b) When Planets Clashed was excellent—deserved H of F.

(c) Stellar Snowball had an interesting theory.

(d) The Soma Racks has Margaret St. Clair's uniqueness, but I expect better things from her as time goes on.

(e) Belarski is worse than Bergey.

(f) Who illustrated When Planets Clashed—wonderful!

(g) I trust this is concise and dry enough for your new letter policy.—*520 Highland Avenue, Ottawa, Ontario.*

Re (f)—the artist in question is named Napoli. Glad you like his initial effort. More coming. Is this tersenough?

SKWALK
by Jim Kennedy

Dear Editor: Well here I am again for another squawk session. And have I got some squawks!

The first is the cover. At first I thought that Bergey had finally snapped a coil in that brain of his. It was one of his worst creations. Then I discovered that Bergey wasn't to be blamed this time. So take my apology to him next time you go see him at the Restmore Sanitarium.

The stories themselves weren't too bad as far as they went, but that's the trouble, they didn't go anyplace. I can remember the day when there were at least a dozen stories per issue. Now you're dropping back into that lull of only four stories per book.

The best was When Planets Clashed. Personally I think the older the story the better it is. For the simple reason that about ten years ago people didn't know too much about Science Fiction and the authors took time out to explain things and they used down-to-earth facts. Today the authors don't explain some of the things. Also they tend to go a little too far towards fantasy.

The Laws of Chance was above average.

Of the two short stories Stellar Snowball was best although I wouldn't consider it an average story.

I couldn't find much sense in the Soma Racks so I didn't like it and won't even bother commenting about it.

The Ether Vibrates was as good as ever. I see that Joe Kennedy is back. For a while I was afraid that I would have to carry on the fair name of Kennedy alone.—*373 Hamilton Street, Redding, California.*

Okay, Jim, my pallid carbon copy friend—drop around for some chloral hydrate any time the mood is upon you.

BELL RINGER
by Rex E. Ward

Dear Editor: Just a brief flash in the ether to compliment you on a great March '47 issue:

(1) "The Laws of Chance" by Murray Leinster. In his first full-lengther for Startling, Murray rings the bell. A fine novel, a little too short.

(2) "When Planets Clashed" by Manly Wade Wellman. Not as good as should be for the Hall Of Fame, but good enough to hold my attention throughout. I'll be waiting to read the sequel.

(3) Tie: "Soma Racks," and "Stellar Snowball." Both passable.

The Art, on the whole, was excellent with Finlay, of course, copping top honors. Marchioni seems to be in a rut. That girl on page 88 looks *exactly* like Thayn Marden, of the last issue! And who did the illustration for "When Planets Clashed"—Orban, Morey? I can't make out the signature in the lower right corner, if it is supposed to be one.

All in all, a fine issue. And by the sound of Kuttner's novel coming up it looks like you may top it. I hope so!—*El Segundo, California.*

A few more letters like that and this column will curl up its toes and die an unnatural death.

AND HERE'S ONE LIKE IT
by John Suggitt

Dear Editor: May I offer my most humble thanks and in doing so give a pat on the back? For the past three years that I have been reading your magazine never has there been a novel by a certain Murray Leinster; you have printed a few shorts but never a novel. I have hoped and wished and even prayed to the great Ghu and now at last my prayers have been answered.

"The Laws of Chance" was my answer. Need I say more than that Mr. Leinster was at his best. He even outdid his First Contact", which in my opinion was a minor classic. Not that a Leinster novel was enough—you even had Finlay do the pics. The one on page thirteen was superb. Take a bow. My only regret was that the cover by Belarski didn't do the story justice.

The HofF story "When Planets Clashed" by Wellman runs a close second. The reason why it didn't place first was that I'm prejudiced against him.

"Stellar Snowball" had a twist to it I rather liked. Apart from that it was very mediocre.

As for the "Soma Racks". It didn't appeal to me in any shape or form.

On the whole tho, the issue was well above average. The departments were good as usual. I liked Perry's letter best because I disagree with him on every point.

Say, what ever became of the other "Joe Kennedy?"—*402 Queen Street, Saskatoon, Saskatchewan.*

Drop us another line, John, and tell us why you are prejudiced against Manly Wellman. Of all the genial and congenial souls we have ever met. . . .

Whatever became of both Joe Kennedys? Somebody let us know.

Incidentally, we have a beef that rivals the trimmed-edge howlers in vehemence. Why don't you missivists put your addresses at the bottom of your letters instead of at the top? It will make life a lot simpler for ye ed.

OUT OF THE RUT
by Gerry de la Ree

Dear Editor: *Startling* appears to be pulling out of its wartime slump. The summer, 1946 and March, 1947 issues contained two of the better novels you have published in recent years.

Kuttner's "The Dark World" (Summer, '46) was a well-written piece in Henry's new-found Merritt style. The story had quite a good plot and, despite its briefness, was above average.

"The Laws of Chance" by Murray Leinster was not the greatest novel ever to appear in *Startling,* but it was considerably better than many you printed between 1941 and 1945. In many respects I found "The Laws of Chance" more interesting than Leinster's recent book "The Murder of the U.S.A." (which was published under his real name, Will F. Jenkins).

It is also with a sigh of relief that I note the more mature nature of most of the letters published in the March issue. Also the quantity of letters. Your fanzine review column and letter section are, at present, unrivaled in fandom.

As to the future I'd like to cast a vote for longer novels by such boys as Kuttner, Leinster, Jack Williamson and Manly Wellman. In the early days of *Startling,* Otto Binder turned out some fine novels. If you could get him to write some more scientifiction, I think you would make a lot of friends. As to art work, let's see a lot more of Finlay.—*9 Bogert Place, Westwood, New Jersey.*

So you want Wellman, Gerry. Well, so do we in spite of the Suggitt antibias. As for the letters, how mature can you get anyway? We'd like to have Williamson and Binder back too. Thanks for a nice epistle.

BHU!
by Leatrice Budoff

Dear Mr. Editor, Sir: *Now* what did I do? I write a perfectly innocent pome extolling (in my queer fashion) the virtues of Bergey's Bems, Babes and Bores, and what happens? For the first time in Ghu knows how long, there ain't no Bergey on the March cover. I protest!

Getting down to contents, "The Laws of Chance" was

pretty good, and ditto the HOF piece. But oh—those short stories! Soma racks! Bah! TEV brings up the most controversial topic in Science Fiction, and the most inspirational—Alien Life. I've just one fault to find—it was too short. You should develop this department. It's worth it.

Tell Mr. Talbot that any time he wants to come over to my place, I'll be glad to instruct him in the Facts of Fandomania. Has Mr. Perry ever read "The Mysterious Island"? Kennedy, as usual, is swell. Congrats on the Squelching of Sigler, Editor.

Imagine a girl on the cover of SS with clothes on! Tch, tch. What *is* this world coming to? Your poetry, Mr. Editor, continues to beat anything the readers send in (including my own, I'm forced to admit). Also, your pun-gent headings continue to bring joy to the ears of this pun-ch drunk gal. I confess, I am an incorrigible addict.—*987 Schenectady Avenue, Brooklyn 3, New York.*

Budoff course you are, Lee. Wish you'd put the thing in rhyme to give us a chance to throw one back at you. As for alien life, your guesses anent same are at least as good as ours—and almost certainly as futile. Heck, we'll give you a poem anyway—

Those Bergey wenches, lithe as eels,
They certainly do fetch one
But still we long (are we the heels!)
To see a B-BEM ketch one!

Which should take care of *that* for the time being.

KETCH UP ON YOUR READING, DON
by Don Hutchison

Dear Editor: What? No Bergey? Tch! Tch! Glad Finlay is still around. His illustration on page 13 was well done. I haven't finished reading THE LAWS OF CHANCE yet, however it seems very good so far.

WHEN PLANETS CLASHED was O.K. It's a great improvement to have the HF much longer than before. THE SOMA RACKS and STELLAR SNOWBALL were both fair shorts. The former was perhaps enjoyed more. Authoress St. Clair has the ability to tell a story humorously enough that it seems to balance off the serious entries.

The discussion on H. G. Wells was interesting. THE WAR OF THE WORLDS and THE TIME MACHINE were his two best as far as I'm concerned. I would like to have heard Orson Welles' radio dramatization of the former. It must have been very convincing to cause the furor that it did. I also liked FOOD OF THE GODS and THE ISLAND OF DR. MOREAU. I believe DR. MOREAU was once made into a movie starring Charles Laughton.

THE ETHER VIBRATES was good. It contained the shortest Kennedy and Oliver letters I've ever seen. Poor Chad's missive seems to have been chopped to pieces.—*7 Tacoma Ave., Toronto 5, Ontario.*

Congratulations on liking the St. Clair short. Hooray! And give us a reading time on THE LAWS OF CHANCE—if you have finished it yet.

As for the late H. G. Wells, we like all the items you mention and did hear the famed "Martian" broadcast. The Laughton movie was a no-star dreadful. I wonder why so few Wells fans seem to have read A WORLD SET FREE or THE SLEEPER WAKES. Both of them belong way up there.

BRIEFIE
by John S. Frassler

Dear Sir: Your story in the March issue, WHEN PLANETS CLASHED, was terrific. I especially liked the illustration and will look for this artist's work in your next issue.—*2249 West Fillmore, P.O. Box #2431, Phoenix, Arizona.*

His name, as before mentioned, is Napoli.

BURGESS BURNS
by Fred Burgess

Dear Editor: I'm writing this letter on a borrowed copy of STARTLING for the simple reason that somebody in the distributing office likes to keep the latest issue away from Chapel Hill until the next issue has come out on the stands elsewhere.

I guess I'll give a short review of this latest isshu. The March ish, that is.

Cover: by Rudolph Belarski. Hmmmm. Maybe Bergey wasn't so bad after all.

The stories rate in this order:

Place:	Title:	Author:	Rate:
1st	Laws of Chance	Murray Leinster	74%
2nd	When Planets Clashed	Manly Wade Wellman	40%
3rd	Stellar Snowball	John Barrett	05%
4th	The Soma Racks	Margaret St. Clair	02%

Rate means the approximate value of the story as one of the best you publish this year. At the end of the year I'll be able to look over my ratings and there will be the best stories of the year.

By the way, here's just a brief comment on "The Soma Racks." I don't think that the *Tranquilate* would have caused Jick (sic!) to forget what had happened under the influence of the *Vitalizer*.

TEV: What does the B. B. in Norton's name stand for? Best letters were by Burgess and you didn't print them. After that, Oliver, Cunningham, Gabriel, Weeks, and Beery. Coslet must be out of his head. Who wants Schomburg? He drew so many comic book covers (thirty thousand at last count) that his style has become more fixed and out of place than Marchioni's.

As usual, a plea: ALL FEN RESIDING IN NORTH CAROLINA, OR WHO HAVE LIVED IN NORTH CAROLINA, PLEASE GET IN TOUCH WITH ME AS SOON AS POSSIBLE. THE NORCARFAN CLUB IS GROWING DAILY. IF YOU WANT TO BECOME A MEMBER OF ONE OF THE NEWEST AND BEST FAN ORGANIZATIONS TODAY, GET IN TOUCH WITH ME OR WITH:

Andy Lyon
200 Williamsboro Street
Oxford, N. C.

That's about all. Maybe I could ask for better stories. I could even write one for you. I wouldn't want to ruin the mag's reputation with a *good* story though.—*115 Aycock, Chapel Hill, North Carolina.*

Come on and ruin us, Burgess! Your guess on the B.B. in Norton's name rates with ours. Perhaps it is Bridlecar Beluchistani or something similar—in which case he is denying humanity of something fine.

WELL, IT'S A KENNEDY ANYWAY
by Janice Kennedy

Dear Editor: Mr. Leinster distinctly describes the girl's apparel as "whipcord slacks and a girl's corduroy jacket". Can you see any girl, especially one who had already captured her man thoroughly, running around in that torn-up rag? . . . . Arriving at the vibration department, that speculation on alien life forms was good. Wasn't it Ed Hamilton who wrote a right good short story awhile back about life on Mars appearing in horrible forms simply because the thought waves of sf writers created them that way? (We don't remember—Ed.). Who knows. . . .

I am among the mourners for the days of Wart-ears

and Xeno, but the letters seem to have improved and the Sarge (?) is just as usual, Xeno or no. Need I say more? (We bow—Ed.)

All this writing to get to the stories. . . A vast improvement over the last few issues I might add—

1.) THE LAWS OF CHANCE—Leinster really hit with that one. Seems to be a new idea and a good one at that. I suppose a million stories will be generated by this one. What's more, the illustrations were good.

2.) WHEN PLANETS CLASHED—Reviving faith in M. W. Wellman. Well written, not too much romance, enough adventure and that too-often-missing factor, a plot. Am looking forward to the sequel.

3.) STELLLAR SNOWBALL—It's hard to say which of the shorts is worse. This one leads because it is without double talk. But of all the hacky stories!

4.) THE SOMA RACKS—Mrs. St. Clair might as well stick to detective stories. . . And it could have been such a good yarn too. I'd like to see more of her—without the double talk.

What became of Eando Binder? Also that nut who used to travel through time with the aid of a professor and got into such hilarious scrapes? Also Tubby the dreamer? There's too much of this lost-civilization and what-will-follow-in-the-atomic-age stuff.

I want it understood plainly that I am no relation to our boy Joe—*1086 West 35th Street, Los Angeles 7, California.*

One thing we object to in women is pointed out by you, Janice—their tendency to abandon all Daisy Mae-isms once they have thrown and hogtied their males. Don't let it happen to you, with or without Belarski's aid. Anent Mrs. St. Clair's double talk, colloquialisms of any era sound double-ish when moved forward or aft in time. We thought her "created" slang one of the outstanding features of the story—and still do. It's a very neat trick—and a very difficult one as well.

The Eando Binder question is already answered in this column. As for your time wanderer, that was Pete Manx. Arthur K. Barnes and Henry Kuttner took turns writing him under a co-pseudonym and he was truly hilarious. Remember when he went back to the days of the Wall Street boom in the twenties to clean up on the Stock Exchange and started the 1929 Crash? Wish they'd write us some more of them, but the vein seems to have been worked out.

Too bad you aren't related to JoKe. But you gave us enough laughs as it was.

WHO'S FLAT?
by E. A. McKinley

Dear Editor: Give Mr. Leinster a placative pat on the back, tell him I said LAWS OF CHANCE was very nice, but couldn't he do better next time? I applaud the idea behind the story.

The highly sophisticated note which you say M. St. Clair brings to the STF field was distinctly flat in her SOMA RACK story. There was actually no reason for the story's existence.

STELLAR SNOWBALL leaves me cold (any old pun in a storm, particularly a "snow storm"). Tell Mr. Barrett to put some meat on the bones next time.

All in all, it was a swell issue. Only one thing wrong with it, I couldn't gripe about the H of F story. M.W.M. is always welcome in these parts (Pardon em wah, msieu, correct that to read MWW).—*501 East Lincoln, Wellington, Kansas.*

Perhaps a little more sophistication on the part of some of the fans might help all around. It is not necessary to live in a terrace apartment overlooking Fifth Avenue to acquire it. Or is maturity a better word?

BELARSKI TRAPPED!
by Wally Weber

Dear Editor: I see you trapped a new cover artist. I figured you would get rid of Bergey after sneaking a couple of spaceships on the January cover like he did. Rudy does quite well though. At least we got a good trade-in.

Wow! Quick Flintheart, the seed peas; my left ventricle can't stand the shock! A Hall of Fame classic that is actually a terrific story! What won't you think of next? Give my regards and a carton of Startling Stories to Mr. Wellman for a swell story.

Keep up the good toil on the fanzine reviews. I don't know why I like the things, but I do. And while I am on the subject of upkeep, I wish you would keep up your policy of cutting letters except in the cases of Chad Oliver and JoKe. In fact, why not hire them to do short, absurd stories on whatever they feel like writing about? (Oh, I didn't know there were so *many* reasons.)

No complaints on the March thrill except that the short stories were hard to take. I . . . guess I will still buy your mag. In fact, try and stop me.—*Box #858, Ritzville, Washington.*

We wouldn't think of trying, Wally, bless you.

A MIGHTY MAN IS HE
by W. R. Mullison

Dear Editor: I have been informed that you can tell me where E. E. Smith has published a couple of his stories in novel form. I understand the two published were THE SKYLARK OF SPACE and THE GALACTIC PATROL. I would like to order these two volumes as well as LENSMEN if I knew where they could be obtained.—*2010 Ashman Street, Midland, Michigan.*

THE SKYLARK OF SPACE was published by the Hadly Publishing Company, 271 Doyle Avenue, Providence 6, Rhode Island. This same firm is, I believe, soon to publish others of the series. But the other E. E. Smith published is SPACEHOUNDS OF IPC, not GALACTIC PATROL. Fantasy Press of Reading, Pennsylvania, published it and lists the same author's TRIPLANETARY among its forthcoming issues. All of these books are priced at $3.00 per copy.

TRADER CORN
by Lynn A. Hickman

Dear Editor: I have been reading your magazine since the first issue and so I thought it was about time I wrote and told you I like it. I haven't got very many kicks coming, as I like most of your stories. Edmond Hamilton is the best writer you have. I'll never forget his "Three Planeteers".

I have a fair collection of Science Fiction & Fantasy mags that I would like to trade. Anybody wishing to swap, write. All letters answered—*Box #184, Napoleon, Ohio.*

You have our permission, Lynn, so go right ahead.

KNOCKED OUT
by Robert Griffin

Dear Editor: It's high time that I told you how much I enjoy *Startling Stories.* I get hour after hour of entertainment. Oh, yes I do. I always read it two or three times.

Allow me to compliment you and the author for "The Laws of Chance." Not since "After World's End" have I read such a splendid story. PS. AWE was written in 1934, or along about then.

May I make just one complaint? As per usual, the covers which illustrate some story always contain something or other that is not in the story. For instance: on the March ish, rocket ships can be seen in the background. As I gathered from the story, they were supposed to have been knocked out (and crashed shortly thereafter) just as they came over the horizon. These, however, seem to be peacefully flying along through the sky. Oh well, maybe *it's me who's dumb.* And when did Jane Russell begin posing for the covers? Tut. Tut.—*1328 Ballard Avenue, Dallas, Texas.*

Perhaps it was a very low horizon—if anyone else looked at it. Otherwise, thank you too, Robert. A very Fort-Worthy letter.

WHOST WHOSTIES!
by Paul Anderson

Dear Editor: In the March issue of SS, the reader is helped to the same old hash, the blue plate special which seems ageless and enduring—but still mildly nourishing and digestible in our battered twentieth-century literary stomachs. I like hash. Most of the readers who beef should realize that, for 15c, they get a pretty fair outlay of stuff in SS and TWS.

The Laws of Chance employs the same good old plot of the battered minority tugged through a mess of words to the expected victory. Not so bad, though. It's readable and interesting if only for the characters.

Science-fiction fans should read one of the big woman-interest slicks before settling down with their favorite SF mag. No. I'm not comparing magazine fields. It's just that SF *stays* with you. You remember the stories and if you don't like 'em you know *why.* It's all the difference between cotton-candy and a hamburger, SF being the meatball.

The Soma Racks is adequate. Do you suppose "Whost" is the equivalent of "Whost Whosties"? Bollo and Geela Nuts sound interesting. Glad they still have pie in the future; Jick ate three slabs. So they still have flies, too, what with DDT etc.

Stellar Snowball plus Mr. Marchioni (is it true he holds his pen in his teeth?) is a mean trick to play on your reader, Editor. Put Barrett and Mr. M. both on pensions.

When Planets Clashed, Mr. Wellman and the illustrator . . . ? Well, I'm still good for fifteen cents, Editor.—*6702 Windsor Avenue, Berwyn, Illinois.*

Tell your dealer to let you have it for fourteen cents after that one, Paul. I'm sure he won't mind as long as you give him a penny tip. Whost Whosties—uuggghhh!

SUCCINCT YET!
by John Walsh

Dear Editor Enclosed find a few random thoughts, commonly known as a fan letter. I'll try to make it as succinct as possible.

Belarski cover—he's improved since the horrors he passed off on TWS years ago. And it's quite a bit better than the last few Bergeys.

Leinster's novel fine, per usual. Most "different" novel you've printed since . . . . since . . . . huh. Skip the since and put a period. Superb dialogue and characterization. Definitely first-rate.

Wellman's Hall of Famer exceptionally good, for a change; compare it with "Solar Invasion". Didn't think you could. Rather ancient pic, don't you think? Morey? Wesso? Kildale? Who knows?

"The Soma Racks" was, as you said, well-written and amusing. Can't see any resemblance to Brackett, tho. The other thing was, in Chad Oliver's words—Wow! SPACE PIRATES!!

Finlay's good; has done much better, however. Whoozis absent. Too bad. Marchioni present. Ditto

As for this Wells business, I liked the "First Men in the Moon," just to be different. Haven't read "The Time Machine".

What is Bill Weeks gibbering about in his last two paragraphs?

You discussed the dearth of depiction of truly alien life-forms in stf. "A Martian Odyssey" had some cuties in that line. And TWS's "The Lotus Eaters" created a truly unearthly atmosphere (and presumably creatures) which was quite outre and effective. That quality, I agree, is very rare. Very.

Good issue, this. Have great expectations for "Lands of the Earthquake".—*154 North Main Street, St. Alban's, Vermont.*

That was Napoli who illustrated the HofF in the March issue—and he's a newcomer. Who's Whoozis, huh? As for Weeks, you have us there. Maybe he can elucidate—maybe. We still like Leinster's DE PROFUNDIS on alien life forms.

SOMAS ON THE RACK
by John W. Patch

Dear Editor: Cheers for the March issue! "The Laws of Chance" was an excellently written novel—Leinster can be depended on for that type of work—with an excellently developed theory. "When Planets Clashed"—fair. "Stellar Snowball"—a better-than-average short. "The Soma Racks"—!!?? What gives? No point to the thing! WHY DID YOU PRINT IT?

The cover was pretty fair. Ah, yes, the femme was pretty, too. But here comes an old gripe—why don't the artists read the stories they illustrate? I quote from page 27 (This is before the scene illustrated) "Frances came back to them, radiant. The whipcord slacks and the corduroy jacket fitted her." Yet, on the cover, she's wearing a badly torn scarlet dress! Of course, the slacks and the jacket wouldn't show off as much of the feminine form divine. . . .

I was amazed to see the number of readers that praised last fall's Captain Future novel. I wonder what a survey of the ages—or more accurately, the mental ages—of these lovers of the "space-opera" would show? *New Concord, Ohio.*

If you failed to get the point of THE SOMA RACKS, we would very much like to have a record of your own mental age, Johnny-boy. Read it again after you have been married for awhile—or better yet, have your wife read it.

Re your insulting remarks anent the Belarski cover—when you said that slacks and jacket failed to show off the feminine (hmmph, always thought it was "female") form divine, you said all.

Next, please. . . .

WHAT IS SOMA?
by Jack Doherty

Dear Editor: Generally after reading Startling Stories I put it aside and forget about it never bothering to comment about the stories to you through the medium of The Ether Vibrates.

But when I finished the March Issue I figured it was about time that I put in my little say along with the many others. So here goes:

The stories were good as usual with every issue of S.S. But Manly Wade Wellman's exciting yarn, WHEN PLANETS CLASHED, was certainly tops in my estima-

tion and I'm glad to see that you are going to present a sequal to this story in the next issue.

THE LAWS OF CHANCE by Leinster was pretty dull stuff. It had some thought behind it I'll admit, but the story wasn't very convincing. But better luck next time.

THE SOMA RACKS was short and sweet but resembled a scientific version of a daytime soap opera. But I'm still in the dark as to what a soma bottle is or for that matter what a soma rack is. But still it was a fine story with a humorous side to it.

Changing the policy of your readers column was a godsend. Now maybe I can understand some of the things you print in that department. The other departments are tops especially the review of the fanzines which makes your mag the best of its type on the stands.—*68 Latimer Avenue, Toronto 12, Ontario.*

Soma? What is Soma? What is a soma rack?

The last is easy to answer. A soma rack is a rack which keeps a soma bottle upright so that the bouquet of the pleasant elixer will not be dulled by tilting. As to what soma is, you'd better write Mrs. St. Clair. And shame on you for finding the Leinsterepic dull!

LEAPING LINA
by Lin Carter

Dear Editor: The sign on the door proudly said YE ED. Ignoring this, the virile youth blithely pushed open the door and entered the sanctum sanctorum. Behind the desk, perched on a swivel chair sat a portly gentleman, with thinning hair, what is referred to in polite society as "middle-age spread", and ulcers.

He leaned back and, pushing a green eye shade from his eyes glared belligerently at the youth and bellowed, "What the Ghu do you think you're doing in here?"

The handsome youth calmly brushed a pile of dusty manuscripts onto the floor and seated himself in the chair. "I'm Lin Carter, and I've come about the March ish of Startling."

Saturn rubbed his hands together gleefully and beamed over the rejection slips at the youth. "Well then, Okay." He tapped his teeth with a poor attempt at being casual, "Ah. . . . how did you like the . . . er . . . cover?"

"Although it's a break in the monotony to see Belarski, the cover was, to put it bluntly, awful," Carter said, coolly flicking some dust from his coat with a used novelette.

"Oh . . . I see . . . " Saturn said, crestfallenly, "Well, how about the Lead Novel?"

"Pretty good . . . in fact, *quite* good. Although I can usually either take Leinster or leave him alone, this novel is going to make me a Leinster fan! Swell Finlays, too!

The Sarge grinned enthusiastically, "I liked it too! How about the Hall of Fame novelet?"

"Best story in the whole mag! And good pics, too. They look like Scheenan."

"Shorts?" the Sarge said tentatively.

"Average, only average. 'The Soma Racks' was a nice one. The other was rather hacky. Warm plot. The 'Mad Mark', as Oliver cleverly coined, really loused up the illustrations, also."

"Er . . . how was the reader column?" Saturn asked, apprehensively.

"Pretty good. You really cut the letters up, tho. Garven Berry, Kennedy, and Perry all had good letters. Noticed a neat note from my friend Guerry Brown. As a whole it was a pretty good issue, Editor, many more like it! *865 20th Ave. So., St. Petersburg 6, Fla.*

The above is the sort of letter we no longer print. However, in the interests of self-justification, Ye Ed does not sit on a swivel chair, his hair is not thinning and he is totally ulcer-less. Furthermore, he neither wears a green eyeshade (nor any other kind) and does not say "Ghu!"

Otherwise your portrait is essentially correct.

KOEHLERS TO NEWCASTLE
by John Koehler

Dear Editor: This time I will write what every other little eager beaver who writes those things called hack letters writes about, namely your mag. The stories were all good, but haven't I read a few hundred other stories like the HOF before sometime? The pics were passable except the one on page 88. The cover was its usual lousy self, only more so. That thing ye hero is holding looks more like a telephone pole than the secret weapon of Steve's.

Suggestion: why not put the front cover in back and the back cover in the front, or better still, just have two back covers one in back and one in front. I'd rather have "New Battery Lasts 93% Longer" staring me in the face every time I want to read the mag than that thing I always see now.—*1018 South Sprague Avenue, Tacoma 6, Washington.*

Now, let's get this straight—you want the front cover on the back and the back cover on the front and the edges . . . oops, you forgot the edges. We'll have to go back to the Belars—we mean the beginning.

A pink slip trip for a blue slip trip and a blue slip trip for a. . . . We give up!

PEELED!
by Gene A. Hyde

Dear Editor: I don't know if I'm allowed to mention the name of another magazine, but I would like to call your attention to an article in the Sept., 1946, issue of Harper's Magazine that is entitled "Little Superman, What Now". The author of this article seems to think that the unlimited possibilities of sciencefiction have, at last, become limited.

I won't attempt to point out how wrong he is. I'm afraid it would take up more space than the letter column has. I just mentioned the article in case you or anyone else haven't read it. Incidentally, your name is mentioned.

Now that I have that off my chest, I'll get down to the latest iss. of S.S. which I've just finished. Your novel was way above average this time. Leinster did a good job. Interesting plot, unique idea, well written. The laws of chance have always interested me, perhaps that's why I liked the story.

The short stories were both pretty good, "The Soma Racks" ranking above "Stellar Snowball" which was just another space story, but good never-the-less. I like the way Margaret St. Clair takes the ordinary family life of the future and makes a story out of it. I think she sort of disproved her own theory that women can't compete with men in the s.f. field, with that story.

I don't know when the HoF. story was written, but the style went back to the days of Wells. I had heard a lot about the yarn though, so I looked forward to it. It was good, even if, as I said, the style was a little old.

The Ether Vibrates was, as usual, very good. In my opinion it, and the letter column in TWS, are tied for first place among the letters to the editor columns.

Well, that's about all for this iss. However, I would like to repeat the offer I made in a letter to TWS. The offer I made was this: I would like to argue with anyone about anything, either through this column or by personal letter.—*400 East 8th, Beardstown, Ill.*

Why not start your own argument, Gene? We're all for it as we have stated many times. Darn it, the St. Clair story *was* a cutie—we're glad you found it so too.

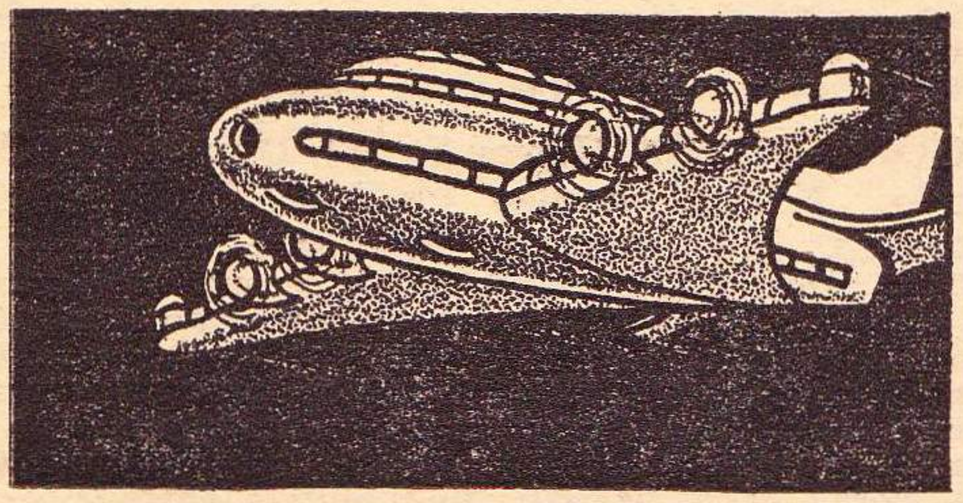
Which ends the list of intelligible (?) letters for this round. We are now in the process of retiring to our corner to take full advantage of the brief rest allowed us before the bell sounds again. Thanks, everyone, we're looking forward to a real bloody nose next time.

—THE EDITOR.

REVIEW OF THE SCIENCE FICTION FAN PUBLICATIONS

CHIEF news, this time, is the first post-war British fanzine to hit our desk. FANTASY REVIEW was announced at length in our last column by Editor Walter Gillings and—sure enough—it arrived in time for comment in this issue.

Neatly printed in medium-small format of handy size, it is well backed by both British and American advertisers, a fact which we were glad to note. Following a cover editorial entitled REVIVAL—whose contents are thoughtful if a trifle obvious, it contains notes on other British stf magazines aborning, a tribute to the late Otis Adelbert Kline, an



excellent profile of A. B. Chandler, a lengthy and informative stf gossip column called FANTASIA by Editor Gillings and a number of excellent reviews of current books and magazines.

It seems to us that its editors have hit a happy policy of dignity without stuffed-shirtism. The whole thing is very happy indeed and we look forward to further issues. From its general tone of optimistic enthusiasm, we might say, "There'll always be an stf in England."

The "bubble-bath" technique of Virgil Finlay is triumphantly demonstrated in a portfolio of eight fine reproductions of his illustrations for one of our rivals, put out by the ubiquitous Walter Dunkelberger of the Fargo, North Dakota, Dunkelbergers. Especially pleased were we to spot the presence of a number of BEMs peering through the starfish, crayfish and sea anemones which drift and cluster charmingly around his human figures. We like BEMs. We also like Finlay. Thanks, Dunk.

We also wish to thank Virginia Laney "Jim-E" Daugherty of 1067¼ West 39th Place, Los Angeles 37, California, publisher of the meritorious BLACK FLAMES, last

[*Turn page*]

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reviewed in the Fall, 1946, issue. She promises further activity, not only in her own editorial rites of Diana, but sends word of a new stag mag to be entitled WOLF FAN. We await both with eager anticipation and hope only that the latter product does not turn out to be a sheep in wolf's clothing.

With which, to the general relief, we again turn to the magazines on hand for criticism. With a couple of exceptions, which shall be duly applauded, the output this time was about average. But we'll let the reviews speak for themselves.

Twelve publications made the A-list, beginning with:

EBON FIRE, 987 Schenectady Avenue, Brooklyn 3, New York. Editor, Leatrice Budoff. Published irregularly. No price listed.

Miss Budoff has dedicated her one-gal magazine, of which this is the first issue, to Jim-E Daugherty "to comfort her for the premature death of her brainchild"—hey, if this is BLACK FLAMES, what about Jim-E's letter just noted, stating that further issues are to come? Otherwise, as publisher, editor, author, artist and staff, the forthright Miss Budoff has done a whale of a job. Her fan column is bright, her stories pleasantly sardonic and her poetry up to fanzine par. Most amusing, however, are her drawings, which never saw the inside of an art school and, praise Allah!—never will. Fine stuff, Lee.

GORGON, 4936 Grove Street, Denver 11, Colorado. Editor, Stanley Mullen. Published bimonthly. 15c per copy, 4 for 50c.

Well worth A-list rating is the second neophyte to be reviewed, from the cover on down the line. Gertrude Voorhies (a newcomer to us) has an excellent little fantasy in DARKNESS and the fangossipery and editorials are fine. However, the cartoons remain a bit too bizarre and we scent an over-preoccupation with the works of A. Merritt, that only slightly-super E. Rice Burroughs of fantasy. The Denver gang, on the whole, however, deserves high praise for this one.

FANEWS, 1443 Fourth Avenue South, Fargo, North Dakota. Editor, Walter Dunkelberger. Published irregularly, 2c per sheet, 55 sheets $1.00.

Better and better grows this sturdy oak of fanzines, with its plethora of announcements, chatter and fanvertisements. Only when Dunk tees off in a personal controversy does FANEWS pall and either the fans have learned to leave him alone or his hide has thickened. At any rate, this issue is feudless and the better for it.

FANTASY REVIEW, 1946-47, 84 Baker Avenue, Dover, New Jersey. Editor, Joe Kennedy. Published annually. No price listed.

A monumental job by the VAMPIRE man, a 76-page ship of the line, featuring intelligent reviews of all phases of fandom and professional stfdom which features perhaps the best of the annual polls on just about everything. The brightest fanzine light of many a long and weary month on Terra—need we say more? Congratulations, Josephus.

ICHOR, 649 South Bixel Street, Los Angeles 14, California. Editor, Dale Hart. Published irregularly. 10c per copy.

Another spawn of the Southern California gang, running heavily to poetry and starring an Alva Rogers cover worth several second looks and a translation from the Esperanto by Myrtle Douglas (Morojo) which probably should have been retranslated into Ido. Just fair.

LUNACY, 1115 San Anselmo Avenue, San Anselmo, California. Editor Jawge Caldwell. Published irregularly. 5c per copy.

Just how this rates the A-list we can't quite decide,

but the cover and printing have improved and Doris Currier has written a poem which we hope was meant to be funny. It is. Otherwise about like past issues.

NATIONAL FANTASY FAN, 200 Williamsboro Street, Oxford, North Carolina. Editor, Andy Lyon. Published monthly. No price listed.
Nothing remarkable, but a competent journal for one of the major fan organizations. As such, it rates.

PSFS NEWS, 122 South 18th Street, Philadelphia 3, Pennsylvania. Editor? Published monthly. 10c per copy, 6 for 50c, 12 for $1.00.
The Philadelphia boys have really made this into something, commencing with a non-dull but scholarly study of current stf trends by Sam Moskowitz and concluding with a poem translated from the Latin entitled REASONS FOR DRINKING. We never thought the ancient Romans needed any—nor do we. Very much okay, however.

SCIENTIFICTIONIST, 13618 Cedar Grove, Detroit 5, Michigan. Editor, Henry Elsner Jr. Published irregularly. 10c per copy, 3 for 25c, 13 for $1.00.
Superior issue this time, with Joe Kennedy even going to bat for the late Captain Future in a thoughtful article on the influence of stf toward a better world. Book reviews by Ackerman and Norman Stanley are fine as are a Karl Brecker lament for a forgotten prozine and a short on Weinbaum and semantics by Robert L. Stein. Elsner and cohorts can take a bow.

SHANGRI L'AFFAIRES, 637½ South Bixel Street, Los Angeles 14, California. Editor, Charles Burbee. Published 7 times a year, he believes.
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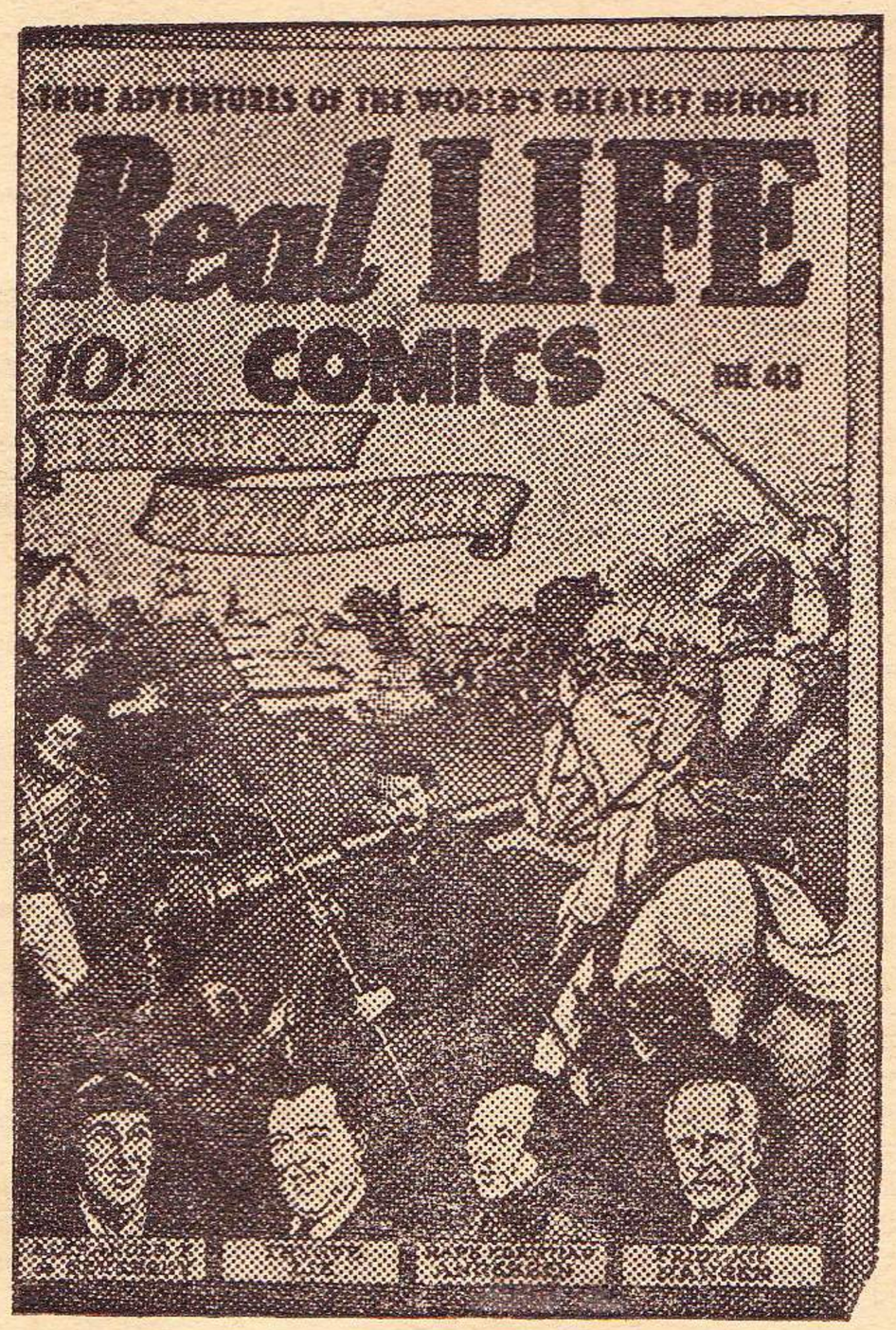

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What can you say about this stand-by save that the doings of the LASFS gang are always lively and amusing and are here well reported. We even like their feuds. And while the current issue has nothing as lamentably uproarious as the account of the Liebscher picnic, Ackerman, Tigrina and Gus Willmorth are all present and accounted for and anyway how entertaining can you get?

SPACE FLIGHT, 9 Bogert Place, Westwood, New Jersey. Editor, Gerry de la Ree. Published irregularly. 10c per copy.

This issue of what we hope is not a one-shot has a simple purpose—the printing of the Beowulf poll on space flight. Just about everyone seems to believe men will someday be blithely skipping from planet to planet save for one fan, Thyril Ladd, and one pro editor who shall be nameless but who is always taking the RAP for something.

STELLARITE, 4 Winship Avenue, San Anselmo, California. Editor, John Cockroft. Published irregularly. 10c per copy.

This seems to us just about right for an amateur mag. The fiction is moderately interesting with no professional pretensions, and if the artwork is pretty poor, the reviews are good. A. E. Burton, Norm Storer, George Caldwell and Tigrina all get in solid licks.

And now into the cellar for the B-list—oops, watch those furnace pipes!

CHAOS, 475 A Eagle Avenue, Alameda, California. Editor, George Ebey Published irregularly. No price listed. Billed as "the messy man's Shangri l'Affaires," it certainly is. For some reason still unknown, however, we chuckled over an item entitled I TALK WITH WORMS, unsigned. Remainder not as funny as editors hoped. Incidentally, we'd like this A Eagle business explained.

FAN SPECTATOR, 20 King Street, New York 14, New York. Editor, Ron Maddox. Published bi-weekly. 4c per copy, 7 for 25c. Mostly doings of ESFA with general reports on amateur and pro stfields. Welcome newcomer.

FANTASY TIMES, 101-02 Northern Boulevard, Corona, New York. Editor, James V. Taurasi. Published weekly. 5c per copy, 6 for 25c. Another good accounting of what goes on in Eastern fancircles accompanied by pro book-and-magazine reviews. Feuds occasionally featured.

FORLOKON, 4749 Baltimore Street, Los Angeles 48, California. Editor, Kenneth H. Bonnell. Published irregularly. No price listed. Odd little item on yellow paper, apparently built around a serial called SHANGHAIED by one A. Weinstein. Seems to stress space opera.

GLOM, Box 6475 Metro Station, Los Angeles 55, California. Editor, Forrest J. Ackerman. Published irregularly. No price listed. Interesting little pamphlet which is mostly Ackerman sounding off in his own inimitable manner—along with Lora Crozetti, Harold Applebaum and Ray Kirby. Grozetti has the smallest contribution, a mustachioed spider just above the contents table.

GRIPES AND GROANS, 2962 Santa Ana Street, South Gate, California. Editor, Rick Sneary. Published irregularly. 5c per copy. A lot of short takes, pretty hard to read thanks to the hectoing. Somebody, however, checked Sneary's spelling.

PHILCON NEWS, 1366 East Columbia Avenue, Philadelphia, Pennsylvania. Editor, Robert A. Madle. Published irregularly. No price listed. The title tells the story on this one—we're for it.

PSFS BULLETIN, 1366 East Columbia Avenue, Philadelphia, Pennsylvania. Editor, Robert A. Madle. Published bi-weekly. No price listed. A one-sheet of Quaker City chatter.

PSFS NEWS, 1366 East Columbia Avenue, Philadelphia, Pennsylvania. Editors, Robert A. Madle & Jack Agnew.

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Published bi-weekly. 5c per copy, 6 for 25c. We suspect this to be the successor of the BULLETIN. At any rate, it's the same sort of stuff, but uses both sides of its single sheet.

ROCKET NEWS LETTER, 10630 South St. Louis Avenue, Chicago 43, Illinois. Editor, Wayne Proell. Published monthly. No price listed. A new gazette for the Chicago Rocket Society of 9,000 Houston Avenue, Chicago, which indicates still further spaceship activity in that area. However, the journal would be a lot more interesting if a new mimeograph machine were used. Much of it can't be read.

SINE NOMEN, 902 North Downey Avenue, Downey, California. Editors, R. Sneary, G. Ayala and J. Van Couvering. Published irregularly. No price listed. A new one with possibilities. Best item in it is a parody of you-know-what, THE TRAGEDY OF A, by Tom Jewett, who gives his occupation as mimeographer. From the looks of the issue, he had better get busy or learn another trade.

SPICY SPACE STORIES, Mississippi Street, Lawrence, Kansas. Editors, N. Storer & A. Jones. Published irregularly. 5c per copy. A first try for these editors, with usual first-try troubles. But what is spicy in the zine we cannot even guess.

WG, 2837 San Jose Avenue, Alameda, California. Editor, Roger Rehm. Published irregularly. 3 for 10c. Wish someone would tell us what WG stands for. Then perhaps we could explain it.

Well, there it is. Not outstanding, but not bad until the typographical trouble in the latter half of the B-list. For next issue, we plan to look into an issue of a year or so ago and tally the turnover. It seems to us to be terrific. But as long as a few stand-bys remain and newcomers keep coming into the amateur publishing field this column will have its hands full. So be it.—THE EDITOR.

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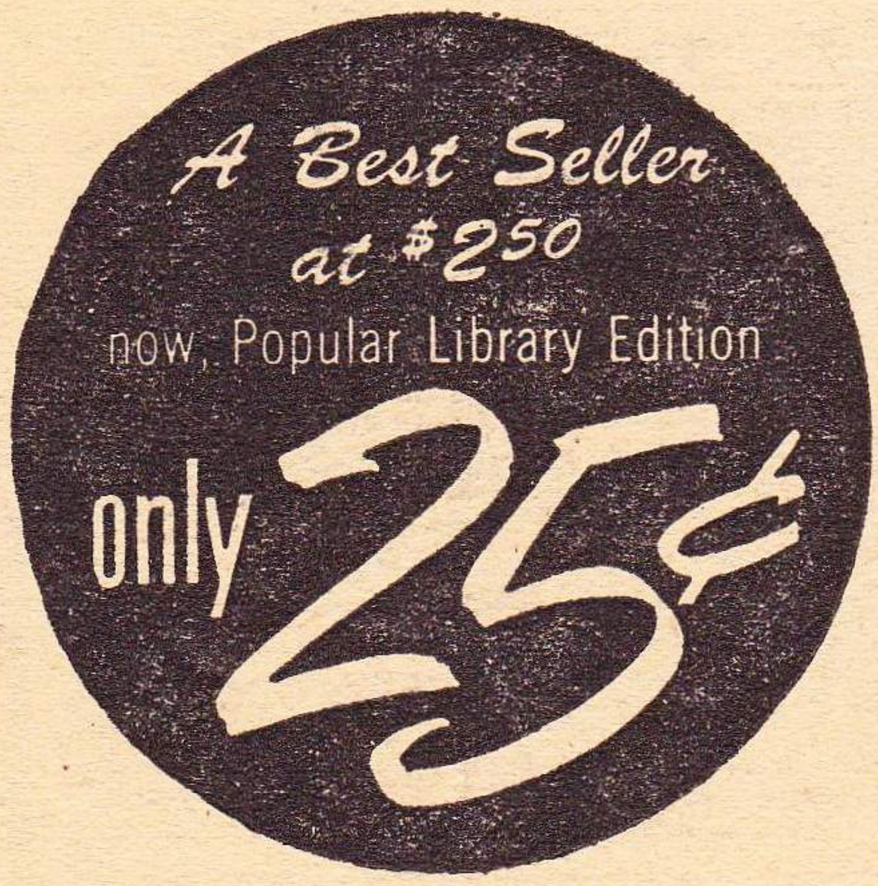

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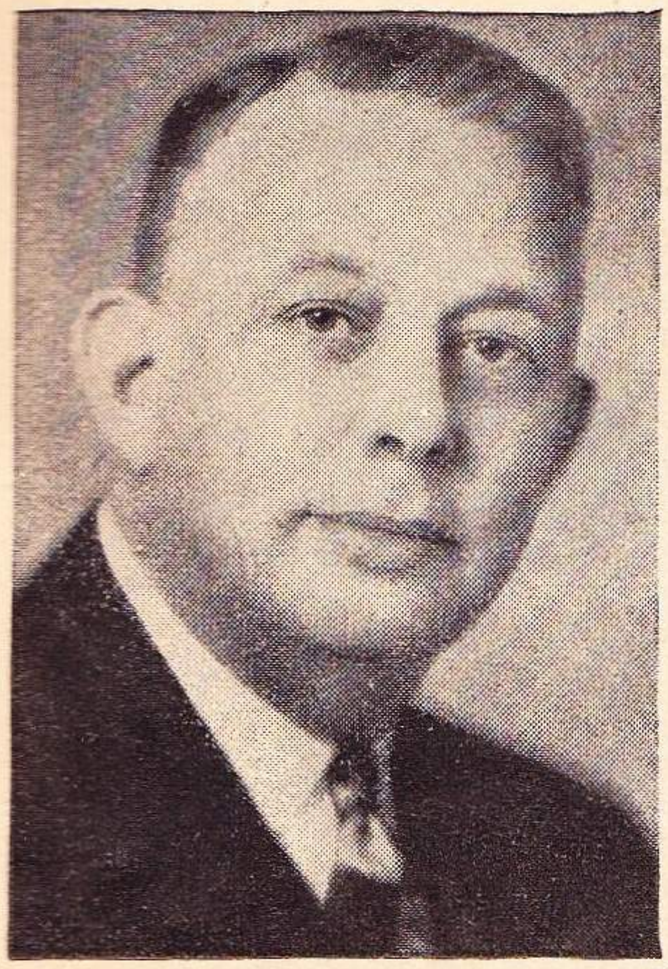

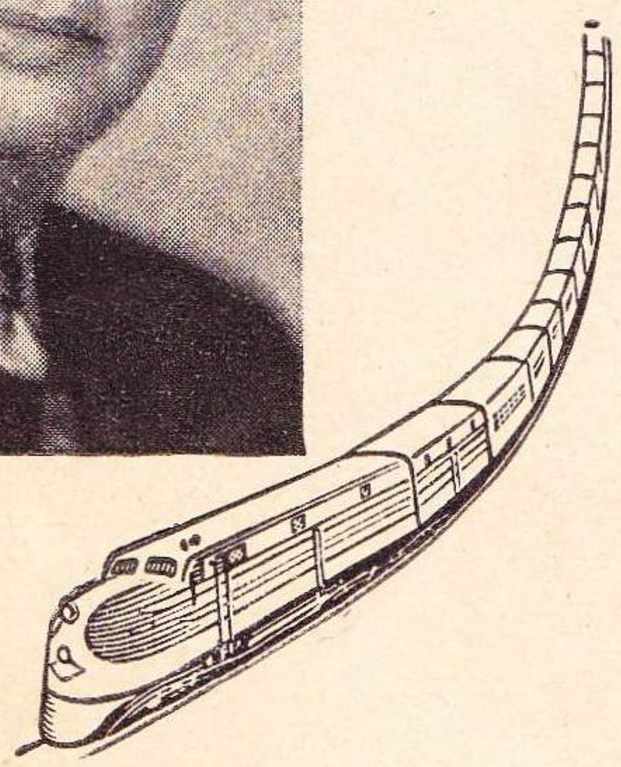

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- ☐ Good English ☐ High School
- ☐ Higher Mathematics
- ☐ Illustrating ☐ Motor Traffic
- ☐ Postal Service
- ☐ Salesmanship ☐ Secretarial
- ☐ Sign Lettering
- ☐ Spanish ☐ Stenography
- ☐ Traffic Management

Air Conditioning and Plumbing Courses
- ☐ Air Conditioning
- ☐ Heating ☐ Plumbing
- ☐ Refrigeration ☐ Steam Fitting

Chemistry Courses
- ☐ Chemical Engineering
- ☐ Chemistry, Analytical
- ☐ Chemistry, Industrial
- ☐ Chemistry, Mfg. Iron & Steel
- ☐ Petroleum Refining ☐ Plastics
- ☐ Pulp and Paper Making

Civil Engineering, Architectural and Mining Courses
- ☐ Architectural Drafting
- ☐ Architecture
- ☐ Building Estimating
- ☐ Civil Engineering ☐ Coal Mining
- ☐ Contracting and Building
- ☐ Highway Engineering
- ☐ Lumber Dealer
- ☐ Reading Structural Blueprints
- ☐ Sanitary Engineering
- ☐ Structural Drafting
- ☐ Structural Engineering
- ☐ Surveying and Mapping

Communications Courses
- ☐ Electronics
- ☐ Practical Telephony
- ☐ Radio, General
- ☐ Radio Operating
- ☐ Radio Servicing
- ☐ Telegraph Engineering

Electrical Courses
- ☐ Electrical Drafting
- ☐ Electrical Engineering
- ☐ Electric Light and Power
- ☐ Lighting Technician
- ☐ Practical Electrician
- ☐ Power House Electric
- ☐ Ship Electrician

Internal Combustion Engines Courses
- ☐ Auto Technician ☐ Aviation
- ☐ Diesel-Electric
- ☐ Diesel Engines ☐ Gas Engines

Mechanical Courses
- ☐ Aeronautical Engineering
- ☐ Aircraft Drafting
- ☐ Flight Engineer
- ☐ Forging
- ☐ Foundry Work
- ☐ Heat Treatment of Metals
- ☐ Industrial Engineering
- ☐ Industrial Metallurgy
- ☐ Machine Shop
- ☐ Machine Shop Inspection
- ☐ Mechanical Drafting
- ☐ Mechanical Engineering
- ☐ Mold-Loft Work
- ☐ Patternmaking—Wood, Metal
- ☐ Reading Shop Blueprints
- ☐ Sheet-Metal Drafting
- ☐ Sheet-Metal Worker
- ☐ Ship Drafting ☐ Ship Fitting
- ☐ Tool Designing ☐ Toolmaking
- ☐ Welding—Gas and Electric

Railroad Courses
- ☐ Air Brake ☐ Car Inspector
- ☐ Diesel Locomotive
- ☐ Locomotive Engineer
- ☐ Locomotive Fireman
- ☐ Railroad Section Foreman

Steam Engineering Courses
- ☐ Boilermaking
- ☐ Combustion Engineering
- ☐ Engine Running
- ☐ Marine Engineering
- ☐ Steam Electric ☐ Steam Engines

Textile Courses
- ☐ Cotton Manufacturing
- ☐ Rayon Weav'g ☐ Textile Desig'ng
- ☐ Woolen Manufacturing

*Name*_____ *Age*_____ *Home Address*_____

*City*_____ *State*_____ *Present Position*_____

*Working Hours*_____ *A.M. to*_____ *P.M.*

Length of Service in World War II _____

Special tuition rates to members of the Armed Forces. Enrollment under the G.I. Bill of Rights approved for War II Veterans.

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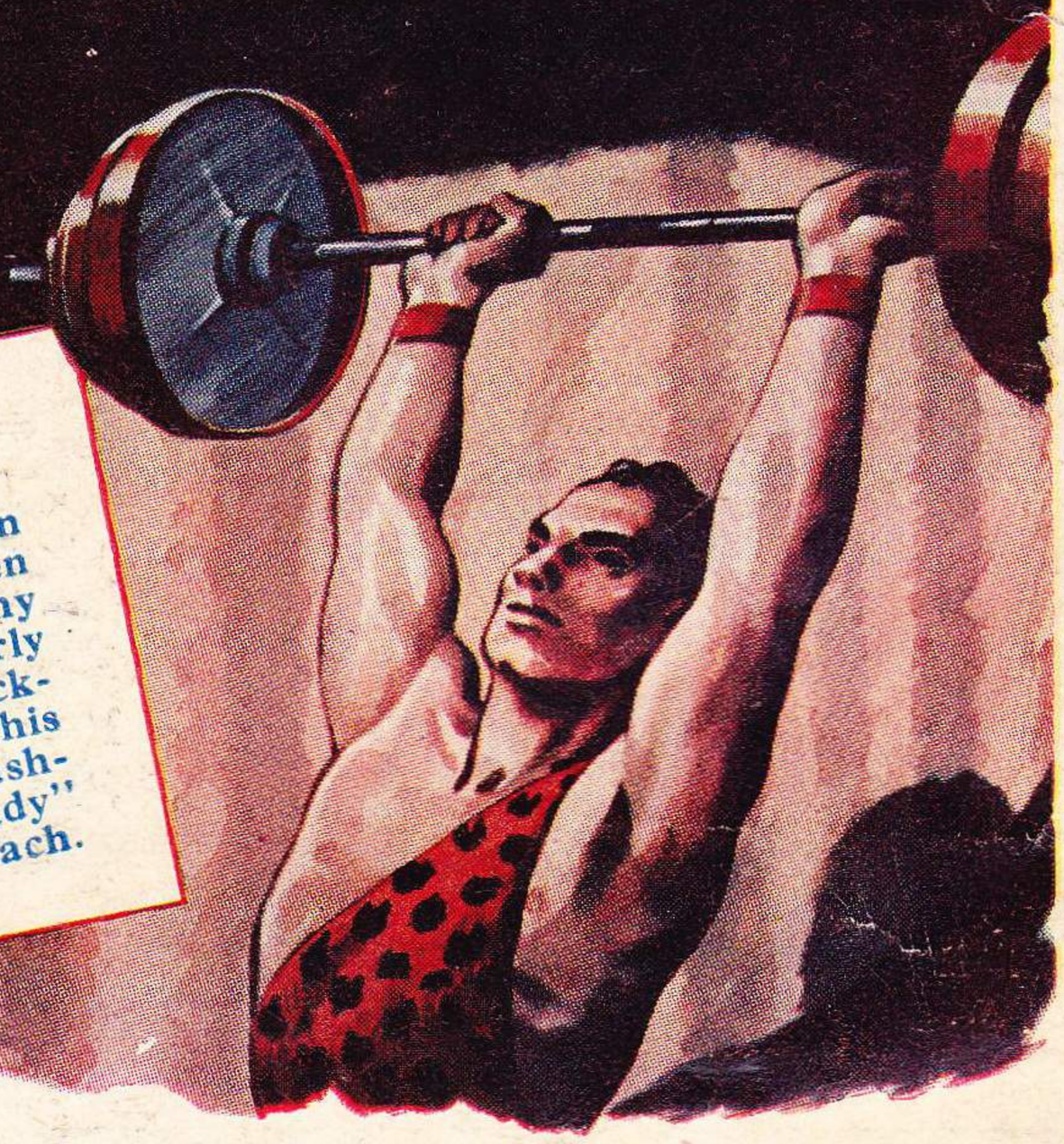

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● You've got a "pipe line to the power-house" when your flashlight contains these great new "Eveready" cells. For they give you nearly double the energy that pre-war "Eveready" batteries gave you. No wonder these are the largest-selling flashlight batteries in the world! No wonder it can be said, "Get 'Eveready' brand flashlight batteries . . . and you get the best!"

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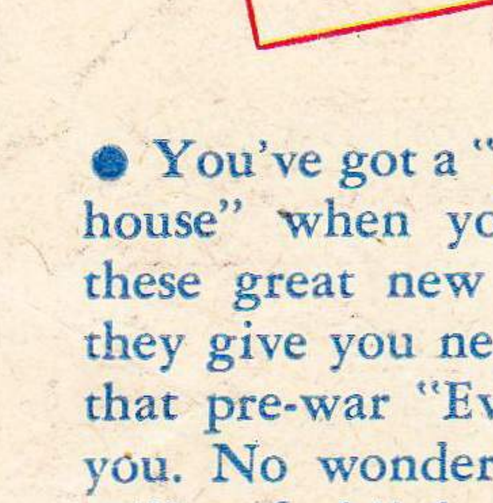

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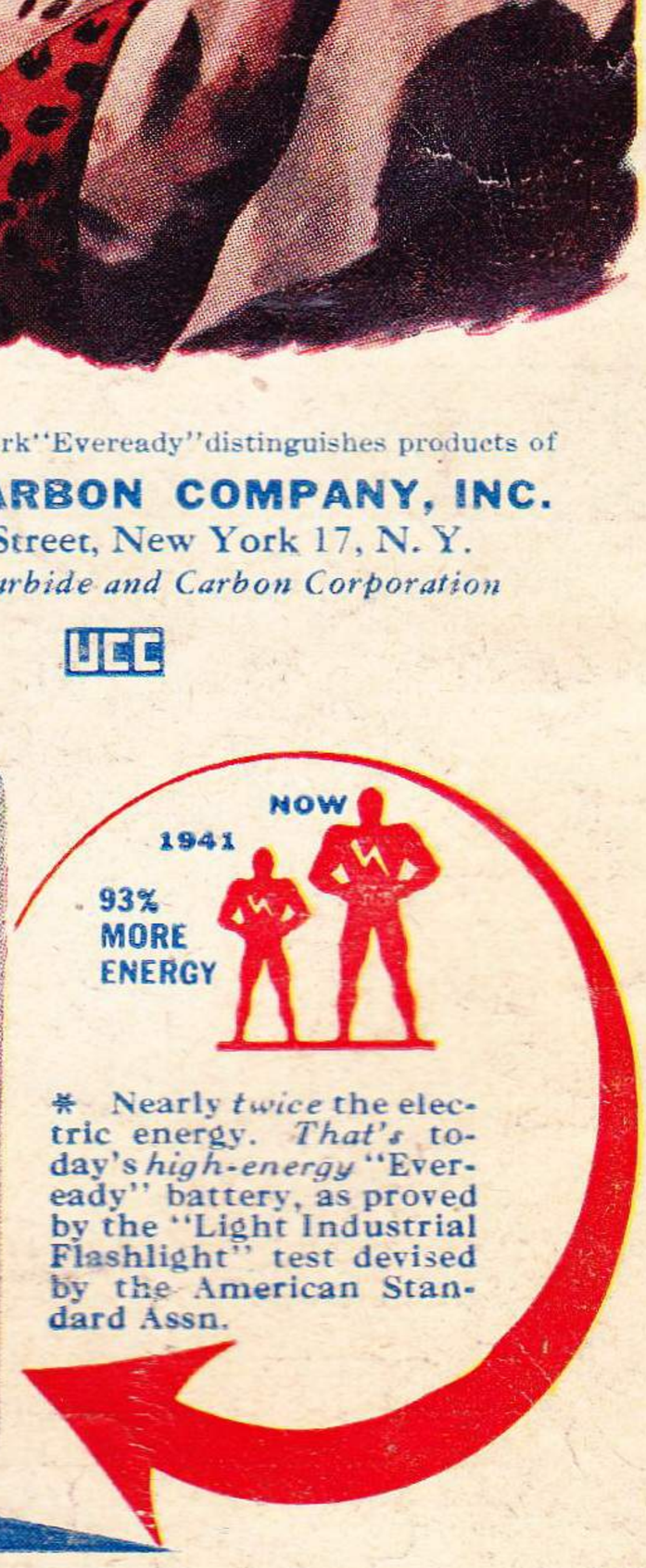

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