SEPTEMBER • 1968 • 50c

Amazing stories

First in Science Fiction • Since 1926

WORLD'S LEADING SCIENCE-FICTION MAGAZINE

NEW **MACK REYNOLD**—WHERE'S HORATIUS!

NEW **BEN BOVA**—MANHATTAN DOME

NEW **RAY RUSSELL**—TIME BOMB

NEW **ROBERT TAYLOR**—IDIOT'S MATE

SPECIAL CLASSIC—PARADOX—CHARLES CLOUKEY

plus stories by: **WINSTON K. MARKS - NEIL R. JONES**

FOR THE BEST IN SCIENCE FICTION

Subscribe now and read top science-fiction stories by such great names as: ISAAC ASIMOV, RAY BRADBURY, JOHN WYNDHAM, FRITZ LEIBER, ROBERT F YOUNG, POUL ANDERSON, KEITH LAUMER, EDMOND HAMILTON, FRANK HERBERT, JACK VANCE, MURRAY LEINSTER, CORDWAINER SMITH, JOHN BRUNNER, RON GOULART.

First In Science Fiction ● Since 1926

Amazing stories

Only $2.50 for one year (6 issues)
EXTRA BONUS! Did you miss any of these great stories.
FREE if you subscribe now. (One for every 1 year sub.)

BOOK 1—PLAYBOY AND THE SLIME GOD by ISAAC ASIMOV, A DUSK OF IDOLS by JAMES BLISH, THE BALD-HEADED MIRAGE by ROBERT BLOCH, FIRST LOVE by LLOYD BIGGLE, JR., STAR MOTHER by ROBERT F. YOUNG, DOLCE AL FINE by JACK SHARKEY, THE BLONDE FROM SPACE by HENRY SLEZAR, NOBLE REDMAN by J.F. BONE

BOOK 2—DONOR by JAMES E. GUNN, DIPLOMAT-AT-ARMS by KEITH LAUMER, THE WORLD TIMER by ROBERT BLOCH, A WORLD TO CHOOSE by POUL ANDERSON, FIREMAN by J.F. BONE, A DRINK OF DARKNESS, by ROBERT F. YOUNG

CLIP AND MAIL THIS MONEY-SAVING COUPON TODAY.

Enter my subscription for AMAZING STORIES

6 Issues only $2.50 ..... 12 Issues only $4.50 .....

Name _____

Address _____

City _____ **State** _____ **Zip Code** _____

Send the following free Issues ..... [List by number]

(Add 50¢ per year additional postage for Canada and Pan American countries; add $1 per year extra for all other foreign orders.)

Mail to: Amazing/ Box 7, Oakland Gardens, Flushing, N.Y. 11364

First In Science Fiction ● Since 1926

Amazing stories

SEPTEMBER, 1968 Vol. 42, No. 3

MACK REYNOLDS OUTSTANDING NEW STORY
WHERE'S HORATIUS? 6

NEW SHORT STORIES
MANHATTAN DOME, **BEN BOVA** 21
IDIOT'S MATE, **ROBERT TAYLOR** 30
TIME BOMB, **RAY RUSSELL** 39

SPECIAL CLASSIC NOVELET
PARADOX, **CHARLES CLOUKEY** 110

NOVELETS
PATTY-CAKE MUTINY, **WINSTON MARKS** 50
LABYRINTH, **NEIL R. JONES** 76

FEATURES
WAMPANOAG EFFECT IN FICTION (Editorial, **HARRY HARRISON** . . 4
NAKED APE OR HAIRLESS MONKEY (Science of Man),
LEON E. STOVER 41
SAO PAULO LETTER, **WALTER MARTINS** 134
THE FUTURE IN BOOKS, **WILLIAM ATHELING JR., LEROY TANNER, ALEXEI PANSHIN, HARRY HARRISON, JAMES BLISH** 138

Cover by **FRANK R. PAUL**
"GREAT NEBULA IN ANDROMIDA"

SOL COHEN, Publisher
HARRY HARRISON, Editor
BARRY N. MALZBERG, Associate Editor
HERBERT A. LEHRMAN, Managing Editor

LEON E. STOVER, Science Editor
HARRY LEE, Art Director
GREENE AND LABINER, Advertising Manager
LILLIAN FRIEDENREICH, Subscription Manager

AMAZING STORIES, Vol. 42, No. 3, September 1968, is published bi-monthly by **Ultimate Publishing Co., Inc., 69 - 62 230 Street, Oakland Gardens, Flushing, N.Y. 11364.** Editorial office: Box 7, Oakland Gardens, Flushing, N.Y. 11364. Business office: Purchase, N.Y. Box 175, Portchester, N.Y. at 50c a copy. Subscription rates: One year (6 issues) United States and possessions: $2.50; Canada and Pan American Union countries: $3.00; all other countries $3.50. Change of address notices, undeliverable copies, orders for subscriptions, and other mail items are to be sent to Box 7, Oakland Gardens, Flushing, N.Y. 11364. Second Class Postage paid at Flushing, N.Y. and at additional mailing office. Copyright 1968 by Ultimate Publishing Co., Inc. All rights reserved. Editorial contributions must be accompanied by return postage and will be handled with reasonable care; however, publisher assumes no responsibility for return or safety of art work, photographs, or manuscripts.

A C K N O W L E D G E M E N T S

Patty-Cake Mutiny, copyright 1955 by Ziff-Davis Pub. Co., Labryrinth, copyright 1936 by TECK PUB. INC., Paradox, copyright 1927 by E. P. CO. INC.

THE WAMPANOAG EFFECT IN FICTION

Editorial by Harry Harrison

The sciences are fine for extracting similes—"a plot that pushes along like the beam from an atomic accelerator" and such—but rarely do we find a one-to-one resemblance between the sciences and the arts. But there is one. The Wampanoag effect. It applies to literature as well as to the physical sciences.

Nothing succeeds like conservatism. It is always there and when, with great difficulty, changes are made, the changes become the conservative policies of the next generation. This attitude must have had survival traits in static societies, such as the Aztec and Mayan, but it tends to be dangerous in a world where everything is changing around you. The story of the good ship *Wampanoag* reflects this mental state at its firmest.

Benjamin Franklin Isherwood was a marine engineer with a very practical turn of mind. In the mid 1870's he did some realistic experiments on laid up American navy vessels and learned a good deal about the nature of steam and mechanical systems to put the steam energy to work in driving a ship. He applied all of his discoveries to the warship *Wampanoag* so that it was driven primarily by steam. His improvements worked and a board of engineers said that it could not be equalled "for speed or economy by that of any sea going screw vessel of either the merchant or the naval service of any country." Pretty strong words indeed, and they were soon backed up by performance. The *Wampanoag* plowed along beautifully in any kind of weather and sailed the Atlantic with great success for a year before a board of naval officers, who had been appointed to report on the steam machinery afloat on naval vessels, boarded her.

This was the ship that put the United States Navy a full generation ahead of other navies. But these were naval officers who had been raised on sailing ships and viewed the whole idea of steam with some alarm. Despite the fact that all independent observers had found the ship steady, efficient and easy, they found fault. They considered the *Wampanoag* a failure and unfit for retention in the navy. The ship was laid up and ultimately sold.

Is there a general principle that can be observed here?

Another editor would point out that the Wampanoag effect is still at work among scientists today, and he would be perfectly correct. But I can see a wider application. The naval officers are what Professor Morrison of MIT calls "culture bound". He explains that culture-bound people behave this way because they are "victims of fixed attitudes, to a set of feelings built up

(Continued on page 144)

STOP SMOKING FOREVER

Over and over again we hear that tobacco is the cause of 98% of all lung cancer cases. Recent studies show that one out of every four smokers is a potential victim of this dread disease. Yes, tobacco is the most deadly poison developed by our civilization. Aside from lung cancer, cigarettes are the cause of other extremely serious diseases.



There is one chance in 4 that a heavy smoker may be stricken one day by lung cancer.

Tobacco smoke is composed of 84 substances, 5 of which are carcinogenic (cancer causing) and 30 are toxic (poisonous). Every time you draw on a cigarette, cigar or pipe, you are exposed to at least 44 different chemicals and poisons, 23 among the most deadly are: lutidin, rubidin, carbolic acid, formaldehyde, methalymine, acreilin, collidine, viridin, arsenic, formic acid, nicotine, hydrogene, sulphide, pyrrol, furfuroi, benzpyrene, methyl alcohol, prussic acid, corodin, ammonia, methane, carbon monoxide, pyridin. Quite a lungful of deadly poison for just one puff of smoke!

In a recent survey conducted by a leading American Doctor the incidence of coronary diseases (infarction, angina pectorus, etc.) has been found to be 68% higher in smokers than in non-smokers.

So, if you want to stay healthy, you've got to stop smoking. But, be careful! Don't stop smoking all at once. That could be dangerous.

Now, where's this advice coming from? Some cigarette or pipe tobacco advertiser trying to make the best of a bad situation? Of course not!

This is the advice of the Anti-Tobacco Center of America, an organization designed especially to help you rid yourself of your addiction to tobacco.

OBESITY LURKS JUST AROUND THE CORNER

Well, our experience has shown that a "confirmed" or "heavy" smoker should not stop smoking all at once, as this will seriously endanger his health and well being.

For years your body has been accustomed to its regular daily intake of toxic substances such as nicotine, tars, etc., and by now it is adjusted to that situation. Cutting tobacco out overnight will result in a shock to your physiological system accompanied nearly always by psychic disturbances. Which results in an imbalance of the sympatheic nervous system.

The digestive system becomes disturbed; the central nervous system becomes up-set; you become "bad-tempered", you can't be bothered by friends, spouse, children, etc., as the least little irritation will make you fly off the handle.

Life becomes hell for you and everybody around you.

But, that's not all; it has been effectively proven that anyone who attempts to stop smoking by sheer will power alone, will suffer terrible feelings of frustration.

A VICE THAT CAN KILL

In order to compensate, he begins to eat and eat and eat. This is why so many former smokers put on excess weight and become fat. Stopping smoking all at once has been the cause of many severe cases of obesity.

So, giving up smoking, by yourself, is not the real solution, as it might endanger your health.

Then, how should you stop smoking?

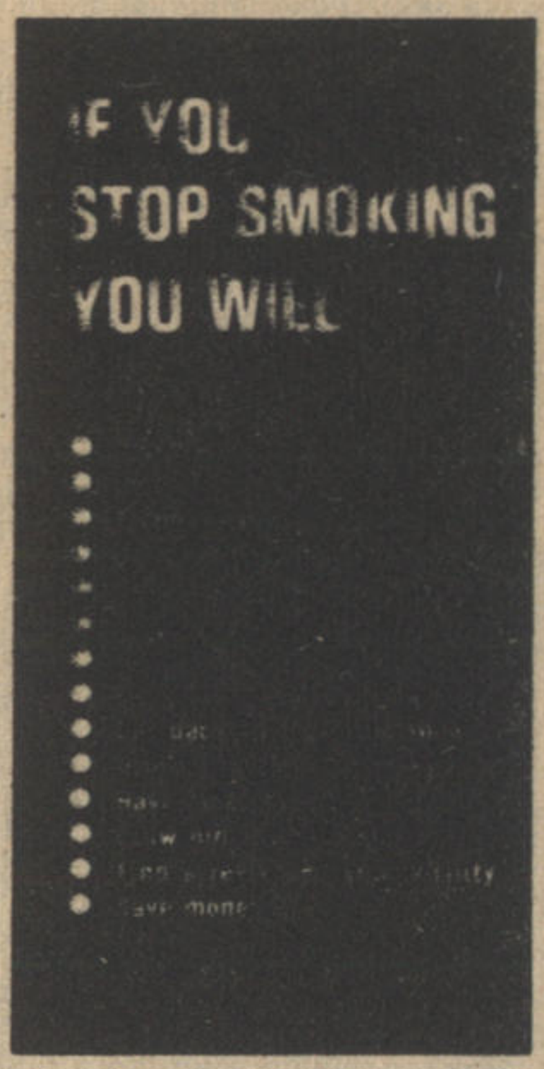
Well, this is what the Anti-Tobacco Center of America is going to teach you.

Just clip and mail the coupon below to receive full information on a program which will help to rid you of your need to smoke. You'll be amazed to learn that you can stop smoking without any danger and without straining your will power; after only a few days the desire to smoke will vanish.

Just think how much happier you will be!

This is the experience of an ex-smoker we all know: MAURICE CHEVALIER "I was sunk in a vice which had left life no meaning at all. I was chronically dominated by a mountain of cigarettes, which like a growing invasion of grasshoppers succeeded in ruining my nerves. I stopped smoking twelve years ago. (Chevalier wrote this in 1960) And it is since this fortunate decision that my mental activities, my intelligence, my memory developed so much, that I — who had lost all interest in life — could escape that growing scepticism and rediscover interest in what happened around me. *I was able again to read and . . . to remember what I had read!*"

Among the 28,683 former smokers helped by the Anti-Tobacco Center, we give you the testimony of some doctors. We have chosen this profession intentionally, because doctors know the harm that tobacco causes. They are able to appreciate the results of our program.



WHAT DOCTORS SAY!

Dr. A. C. "The efficacy of your product surprised everybody. I stopped smoking in ten days exactly. Thank you sincerely."

Dr. J. T. "I have used a supply of your product . . . I was informed of its composition by a friend, Dr. C., who was, truthfully speaking, rather sceptical. But after having used it, I do not smoke any longer and have no desire whatsoever to start again. The result is absolutely clear, without a shadow of a doubt, and I feel it my duty to tell you so."

Dr. E. C. "Since January 23, 1962, I no longer smoke. I have already given the "tip" to several of my friends and patients."

Dr. P. G. "I am happy that I do not smoke any more, this of course being due to the use of your product. All my thanks."

Dr. L. D. "The result was rapid. I think that anybody who wishes to stop smoking can do so."

(Since European law forbids all publicity for doctors, we can only publish their initials.)

ANTI-TOBACCO CENTER OF AMERICA 276 Park Avenue South, New York, N. Y.

Allied with the Centres de Propagande Anti-Tabac in:

FRANCE, Paris -92 bd. de Sebastopol • **ENGLAND**, London—41AKensington Park Gardens
GERMANY, Düsseldorf—Fürstenplatz • **SWITZERLAND**, Geneva—11 rue de Cornavin
ITALY, Milan—3 via Ugo Foscolo • **BELGIUM**, Antwerp—38 Avenue de France
PORTUGAL, Oporto—44 rua da Fabrica • **FINLAND**, Helsinki—152 Hameentie
SOUTH AMERICA, Bogota—Apartado Nacional 1407

For the free booklet on how to stop smoking forever without risk and without straining your will power, just mail the coupon below to:

Stop Smoking Chart Free Book

Anti-Tobacco Center of America, Dept. **A-151-X**
276 Park Avenue South, New York City, 10010

Please Rush Book to me Free of Charge

NAME_____

ADDRESS_____

CITY_____

STATE_____ ZIP_____

Lars Porsenna of Clusium
By the Nine Gods he swore
That the great house of Tarquin
Should suffer wrong no more.
By the Nine Gods he swore it,
And named a trysting day,
And bade his messengers ride forth,
East and west and south and north,
To summon his array.
Shame on the false Etruscan
Who lingers in his home,
When Porsenna, of Clusium
Is on the march for Rome.
Macaulay, *Lays of Ancient Rome*

WHERE'S HORATIUS?

by MACK REYNOLDS

Illustrated by JEFF JONES

Just because history is written in the books doesn't mean that it can't be changed. For one thing-- the published account may not be correct. Then again, time travelers might affect history-- with what kind of results?

Lars Porsenna of Clusium by the nine gods he swore, period.

But Jake Kellerman wasn't having any. He said, "You attack from the west, or the whole deal's off. Nothing does me any good but an attack from the west."

The commander in chief was fuming. He jerked himself erect from the ivory chair in which he sat, and strode to a low table upon which was a crude chart done on vellum. The writing, though the letters were a cross of Greek and Latin, went from right to left.



The Etruscan leader slapped the chart with the back of his hand. His Latin was almost as bad as that of the other, but it was the only language they had in common.

"This is Rome, built on seven hills, walled by Servius Tullius. He was one of the Etruscan

reges of Rome, one of our own, but he must never have known the time would come when his city would revolt against us and his walls be used to keep the adherents of Tarquin Superbus from regaining the town."

He jabbed with his finger. "But Servius Tullius didn't build these fortifications on the Janiculum hill. They are more recent, higher, stronger. Rome hadn't spread across the Tiber in his day. At the present, the western fortifications are its strongest. Better for me to send Verbenna's calvary north to flank the town. We'll attack from the north and east."

Kellerman said doggedly, "It's a matter of light. To tape this fight, I need light. It's not as though I'm working with movie cameras, or television. These tape cameras are in their infancy. I need *lots* of light."

"Your words are meaningless to me, but I tell you the one direction from which it is impossible to strike is the west."

Jake Kellerman looked over at the silent Leslie Black. "What does history say, Doc?"

Doctor Black grimaced. "Precious little, actually. But what does come down to us would indicate that the Etruscan army forced the Janiculum and . . ."

Kellerman held up a hand quickly. "That's all, Doc. We don't want to foul up the king's viewpoint by confusing him with the script."



"I am not a king," Lars Porsenna said testily. "I am lucumo of Clusium and Lars of all the forces of the Etruscan Confederation, having been so elected by the Concilium Etruria, at the Fanum of Voltumna, our sacred grove."

"Okay," Kellerman nodded placatingly, "so you're a lucumo. However, no attack from the west, no

gold." He added as a clincher, "And as you've pointed out, our synthetic gold is the most pleasing you have ever seen."

Lars Porsenna shot a glare at him, then stared down at the chart again. He bit out, "Mamilius, Sextus, Lucius! What do you think?"

His three officers stepped forward, from where they had been standing to one side of the tent, and stared down as well.

Mamilius, a dark young man who carried himself with an air of aristocracy, said slowly, "As a Latin, and one who was educated here in Rome, I have perhaps a better understanding of the Roman outlook than yourself, Lars Porsenna. They are a dour people, lacking imagination. I suspect that an attack from the west would take them by such surprise that the Janiculum fortifications could be stormed before they were fully rallied to the defense. And once Janiculum is out of the way, their defences are meaningless."

Sextus Tarquin, son of the recently deposed rex of Rome, scowled down at the map. "Up and over the walls. Down to the river and across the Sublicon bridge. We'd be in the town before night fell."

"It would either be a brilliant success and a quick end to the war, or it would be a disaster," Lars Porsenna growled.

Lucius Tarquin, older brother of Sextus, wasn't quite so sure. "Why not siege them? The refugees have been streaming in for two weeks. Rome is crowded. Lausulus and his corsairs have captured Ostia, their port. Verbenna's cavalry has cut every road. They'll starve in a month."

Jake Kellerman cut in. "Hey, wait a minute. I can't wait around for a month. I gotta get this thing wrapped up."

Lars Porsenna eyed him in exasperation.

He turned finally and snapped to the guard who stood at the tent's entrance, "Summon Astur, lucumo of Luna."

"Some war," Horace Greeley Bigly muttered in disgust. "Give me one company of marines and I'd clean up both armies. Where's that tripod?"

Steward Flexner, his technical adviser, grinned at him. "One company of marines and a jet loaded with napalm, eh? Biggy, Biggy, you're not in the Asian war, you know. This is the founding of republican Rome." He slung the tripod from his shoulder and set it up.

His partner grunted disgust, and began mounting the tapeing camera. "Napalm? I wouldn't need napalm, Stu. One company of marines with auto-rifles and we'd take both sides, like Grant took Richmond." He jerked contemptuously with a thumb at the forming cohort of Roman spearmen. "Look at that drill."

Stu Flexner looked in the direction indicated. The Romans were crowding, pushing, shoving themselves into a phalanx. A couple of hundred feet before them, an approximately equal number of Etruscans were doing the same. Largely, the difference between the two forces was that the Etruscans had a small number of horse and even a half dozen chariots. Behind them was

a collection of twenty-five or thirty heavily loaded, ox drawn wagons. They were a raiding party, preying on villages near Rome and the cohort had sallied forth to intercept them.

Flexner said, "Actually, I'm surprised that Valerius has as efficient a phalanx as this. According to history, it will be another couple of hundred years before first Thebes and then Philip of Macedonia bring the form to its height."

Bigley continued to mutter his disgust as he arranged his equipment. "I don't see why we go to all this guff, sending teams back in time to tape this event or that. We could do it all up better in Neuvo Los Angeles in the Hollywood studios. Hand me that power pack, will you?"

Flexner said, "That's the point. If they did it in Hollywood, they'd be doing fiction. This is history. Sure, they'll do the close-ups and jazz the whole thing around with a love story dropped in, but the basic scenes, combat and so-forth, the backgrounds, will be original. And, of course, at the same time Doctor Black and I are doing invaluable research."

The larger man dropped the power pack into his camera and sighted, panning back and forth over the field. He was a beautiful physical specimen, in his early thirties.

"Research? Research what?" he said. "It's already in the books."

His partner grunted sourly. "That's exactly where it isn't. History is far from a science, Biggy, and the further back you go the less exact it gets. For instance, what language would you say the Ten Commandments were originally written in, up there on Mt. Sinai?"

"How would I know? Hebrew, I guess."

The anthropologist-historian shook his head. "There was no written Hebrew at that time. There wasn't even an alphabet as we know it. The nearest thing to a written language was the cuniform of the Mesopotamians and there's no particular reason to believe Moses or any of the other Jews could understand that."

Bigley, far out of his field, was looking at him. "Well, the Egyptians had some sort of writing, didn't they?"

Flexner shook his head. "Hieroglyphics. But at that time they weren't developed to the point where abstract ideas could be expressed. The Ten Commandments are pretty sophisticated stuff. Hey! It looks as though the show's about to get on the road."

The cameraman swung his equipment, hunkered down to focus in on the two groups of warriors. The Etruscans were approaching at a slow trot, keeping their lines comparatively neat, the chariots in advance, the horse immediately behind, the spearmen bringing up the rear.

The Roman force, about six hundred infantry, was formed six deep, the men in the rear armed with pikes considerably lengthier than those in the front ranks. Besides these pikes, every man had a javelin. They stood with two yards between each man so that the pikes from behind could reach through

and to give sufficient room to use their weapons and to maneuver. The officers stood immediately behind, their eyes seeking deviation from the line, snarling out commands to keep them in dress.

The cameraman flicked quick shots back and forth between the two forces. He growled, "Okay, now here it comes. Get ready to help me move fast if we get in the way of the action."

"All set," the scientist said unhappily.

But at that point a chariot came racing out before the ranks of the Etruscan raiders, churning up dust and gravel, and dashed toward the Roman cohort. It came to a halt fifty feet or so before the hedge of spears and a magnificently equipped warrior jumped to the ground with a clash of arms and armor. He could have been taken from the illustration of a well done Grecian urn from Attica, ornamented with some scene of the doings of gods and heroes. His shield was round and studded with ornament, his breastplate engraved, his brazen greaves highly polished and his helmet haughtily bore a black horse plume which gave him an additional full foot of seeming height.

He brandished his sword and called out something which was unintelligible to the camera team.

The Etruscan footmen beat fiercely with their swords upon their shields in approval. It set up such a din that Bigley and Flexner could hardly hear Marcus Valerius, the Roman commander, when he said to one of the spearmen, "Titius, what did he say?"

The spearman, who was evidently acquainted with the Etruscan language, said, "He shouted, 'I am Mutius of Perugia, warchief of the Precus gens and commander of this band and challenge to personal combat a chief of equal rank!'"

Valerius snorted and said brittily, "Gaius, can you bring that Tuscan down?"

Gaius was evidently a top javelin man. He eyed the strutting Etruscan and shook his head. "No, sir. If he came another ten feet forward, yes sir."

Bigley muttered, "It looks like our Roman pal is chicken."

Titius was evidently shocked. He said with an edge of disbelief in his voice, "Sir, it is a custom of the Etruscans. He challenges you to honorable man to man combat."

"Big deal," Bigley muttered. "I'd take him on myself if I wasn't a non-combatant."

The commander shot a bleak look at the Etruscan speaking footman. "Silence, spearman, or tonight you are flogged to ribbons. Dress up! Your pike is a full two inches low."

The Etruscan chief had strutted nearer, still shaking his sword in defiance. He evidently had decided that his challenge hadn't been understood, since now he called in miserable Latin, "I am Mutius of Perugia, chief of this band and challenge your leader to personal combat!" And behind him his men again signalled their approval with a clamourous banging of their shields.

But the Etruscan chief was now within range. Valerius rasped, "Gaius! Bring him down!"

With a fluid but powerful cast,

Gaius loosed his javelin and it sped with all the precision of perfect aim. The Etruscan, in mid-stride, looked up in surprise and found insufficient time to bring his shield to his defense. The javelin pierced him immediately below the breastplate, going completely through his body so that the head projected from behind. He turned slowly and with a strange dignity and crumbled to the ground, his gorgeous arms and armor again clanging as they had when he lept from his chariot.

With a enraged roar, the Etruscan line exploded toward the Romans, chariots and horsemen leading.

"Yeah man!" Bigley yelped. "Fire fight! Banzai charge! Man, look at 'em come!" He was grinding away, his feet shifting about constantly in a little dance step of excitement.

Flexner licked his lips. "Are we safe here?"

"Safe?" the camerman yelped. "Think of the footage I'm getting!"

Flexner groaned.

As though the whole thing was a parade, his voice even and harsh, Valerius called, "First rank javelins to be devoted to horses and occupants of chariots. Second and third rank, to cavalry. Fourth, fifth and sixth ranks, to footmen." He paused a moment, then as the chariots rapidly narrowed the distance, "First rank javelins, throw!"

"Man! Look at 'em come," Bigley chortled happily.

The six chariots went down in a screaming, kicking, thrashing of confusion of horses and of impaled or crushed men. Two or three of the occupants rolled free but behind them the Etruscan cavalry pounded, so that they would be lucky to escape death under the hoofs.

Only one of the vehicles got through to the Roman ranks and plunged into the pikes. For a moment, it looked as though the phalanx had been broken and that the horsemen and footmen charging behind would wedge into the opening and break the wall of men into fragments to be dealt with individually. But no, the voices of the officers were barking, "Close ranks! Close ranks! Dress your lines!" And the spearmen struggled and pushed back together so that they again presented a hedge of spearpoints.

Bigley ground happily away. Flexner stood beside him, his shoulders hunched, his eyes, behind black rimmed glasses, were blinking furiously.

By the time the horse arrived, their first edge of anger must have been blunted to the point they realized that impaling themselves on the Roman pikes was not going to avenge their fallen leader, so they began to veer off to the right, dispatching arrows and javelins in number.

Bigley muttered, "Wow! If one of those hits this camera, Jake Kellerman'll have my neck!"

Stu Flexner ducked from a spear that didn't come within fifteen feet of him. "Camera?" he moaned. "The hell with the camera. How'd we ever get into this?"

The other took his eyes away from the fray long enough to grin over at his bespectacled companion. "Shucks, this ain't nothing, man.

You shoulda been in the rice paddies in the Asian war with all those gooks coming at you."

Valerius yelled, "Second and third rank javelins, throw!" And the volley hit the horsemen just as they were attempting to break away, leaving the immediate charge to the spearmen who followed. Horses and riders went down, but not in nearly so devastating a manner as the chariot charge had been met. They were evidently attempting to flank, but for the moment Valerius paid no heed to that. The enemy line of spearmen was about to crash into the phalanx. Behind them the Etruscan trumpets were pealing their shrill war notes hysterically.

The Etruscans advanced in good order, considering that they were coming in on a run, and most of them bore the long pike, which Flexner had told his disinterested companion was called the hasta. They took heavy casualties from the javelins of the forth, fifth and sixth Roman lines, when they were no more than ten paces off, but were slowed not at all.

The phalanx stood firm and took the charge and for the moment so hard was the initial impact that it was pushed back. Those in the front rank were shield to shield with the foe, their spearpoints either high in the air, down to the ground, or wedged between shields to press against man or metal somewhere in the thick of humanity.

But the phalanx held, though at this point the cohort took casulties. The six ranks were too much for the raider warriors who had hit it only three ranks deep. The Romans outweighed them and in only moments, that counted. They broke away and Valerius shouted, "Fifth and sixth ranks, about face! Forward four paces! Sixth rank, kneel!"

The cavalry had torn around the right flank and was attempting to come in from the rear.

"Aiii," Bigley moaned, "we need another camera over there. We're missing it."

"We're getting enough," Flexner got through his teeth.

The sixth rank dropped to one knee, put the bottom edges of their shields to the ground and then grounded their pikes, elevating the points and bracing the butts. The fifth and sixth ranks now presented a formidible defense to the mounted foe and they sheered off again, throwing a score or so javelins as they went.

And now the Etruscans pulled back to reorganize. They must have decided that a pellmell charge against the phalanx was suicide and that it must be broken by other method. They also evidently realized that the cohort of Valerius was without auxiliaries such as would ordinarily have accompanied Roman troops and thus without slingers or archers. So they stood off, both horse and foot, and began firing arrows and occasionally riding close enough to let fly a javelin. Several of the Romans fell.

"Hey!" Bigley snorted. "Let's get out of this. You're just as dead with one of those stickers through you as you are with a burst of submachinegun fire in your belly." He picked up camera and tripod, and yelled over his shoulder, "Bring that accessory bag!"

Valerius called, "Tight phalanx!"

and moving in order, the Roman spearmen stepped closer together. The first rank knelt, shield to the ground, pike advanced, shield linked to that of the neighbor on each side. The second rank placed their shields up atop those of the first rank, which brought them higher than eye level. Those behind, held their shields above their heads, forming a roof. Officers and camera crew were enclosed in the middle. It was a closed fortress of metal and the arrows and javelins fell without effect.

"A tank!" Bigley chortled.

"They call it a *tortuca*," Flexner said. "A turtle. I didn't know they'd worked it out this early."

Valerius shot an irritated glance at them. From the first, when the Roman consuls had been bribed into letting the foreigners accompany his cohort against this Etruscan band of raiders, he had made no pretense of enjoying their company, and now he wasn't particularly happy about hearing them chattering away in a language that made no sense whatsoever to him. Bigley and Flexner had a perfect code, they were speaking a tongue that wouldn't be developed for almost another two thousand years.

But Valerius decided, evidently, that the enemy was most likely in a state of confusion, having lost not only the chief of the band but probably most of its officers as well. He decided to strike before they could reorganize themselves. So after suffering without losses the javelins and arrows for a short time, the Romans again went into open phalanx and at the double headed toward the ox carts and wagons which contained the Etruscan loot and which had been held in the rear of their forces.

It was now either do or die for the Etruscans. If their booty was captured and they had nothing to show for their raid, they would have been defeated indeed. Nor was there any chance of the baggage train escaping, since nothing moves so slowly as oxen pulling heavy wagons.

This time they must have decided to succeed or go down to a man. While the Romans were still advancing on the double, Bigley and Flexner trotting along behind with their equipment slung over their shoulders, the remaining of the Etruscan horse came galloping in. Suddenly they formed a wedge and hit the line at full tilt and with such force that although the first twenty or so horses and men went down on the points of the spears, the phalanx was broken and some of the horsemen galloped all the way through and out behind.

Bigley and Flexner dropped to the ground, held their arms over their heads. But they were obviously unarmed and the hard riding horsemen had no time for them.

"Aiii," Bigley groaned. "What a thing to miss!"

The enemy spearmen headed for the Roman center, where the line had been crashed by their horse, screaming their battle cries and obviously feeling that at last they'd get through the impenetrable hedge of spears for hand to hand work. But Valerius and his officers were unmoved, continually shouting, "Close ranks! Close ranks! Dress your lines!"

The cavalry had largely spent itself in the desperate attack and the fight was now between the foot. And although the Etruscans attacked fiercely, trying to exploit the break in the phalanx, the horse had sacrificed themselves to make, they lacked the numbers. In surprisingly short order they had ceased to exist as a unit and the fighting was over except for cleaning up.

Valerius shouted orders to break into squads and the phalanx, for the first time, dissolved as such and each squad under its own officer, took up the pursuit of the raiders. The cavalry, of course, was able to evade the Roman foot, and possibly a hundred or so of the spearmen escaped as best they could.

It was after the collapse of the raiding party as a whole that the cohort took the most losses. Fighting in small groups, and even as individuals, the Etruscan warriors were at least as competent as the Romans. Bigley and Flexner scurried from one hand to hand combat to the other, getting as close as possible. Bigley was as cool as though on a movie set, Flexner a bit green about the gills at the close-up slaughter.

That night, the two-man camera crew gathered around the camp fires with the others, preparatory to returning to Rome the next day. Valerius had allowed them to butcher some of the rescued livestock and all were gorging themselves with roast goat and mutton.

"Better than C-Rations," Bigley muttered, wiping grease from his mouth with the back of a hand.

"What a way to make a living," Flexner said. "This squatting is breaking my back."

Marcus Valerius came up and motioned all about this particular fire not to stand to attention. His face was characteristically bleak and he said, "Titius, tell me again of the Tuscan challenge to personal combat."

The spearman who understood the Etruscan language came to his feet uncomfortably. "Sir, it is an Etruscan custom. In warfare one of their chiefs will challenge another of equal rank to meet him. It is a sign of high courage and greatly approved of by the Etruscan footmen."

Valerius was not a laughing man, but now his mouth twisted in bleak humor. "Titius, you are a Roman and thus follow the Roman way. You are, further, a soldier, not a warrior. Warriors sometimes become heroes, soldiers remain soldiers. Their task is to kill enemies of Rome, win battles, not to become heroes."

He looked at the other spearmen and the camera crew. "That meat looks good, give me a portion." And with that he squatted down to join them, gnawing on a barbequed kid's hind quarter like the rest. Marcus Valerius obviously knew well the ways of the trooper and when it was time to unbend and become a comrade of the men he led in battle.

After a moment, he shook the bone at Titius and went back to his point. "You saw what happened to the Etruscans as a result of the ar-

rogance and the supposed bravery of their strutting commander who evidently thought of himself as another Menelaus or Ajax. He died and they were then without their warchief. In blind fury—a state no true soldier should ever allow himself to get into—the remaining leaders charged us in their chariots and were cut down. By the time the battle was really joined, there was probably not an officer left among them. Forget about heroism, glory, or even . . . honor, Titius. What we must keep over in mind is that we are Roman, and the enemies of Rome must be destroyed if our city is to fulfill its destiny." He said the last in a harsh tone, which brought a heavy murmer of approval from the various footmen who had drifted up to hear the discussion.

It was an hour or so later that the two outsiders, wrapped in sleeping bags, off to one side, whispered back and forth to each other. Biggy said thoughtfully, "You know, Stu, that Valerius is a tough customer. He talks like one of those Hitler period Nazis."

Flexner breathed in softly. "That he does, Biggy, that he does. The thing is, Hitler flubbed establishing his thousand year Reich. But the Romans didn't. For a millineum they imposed their version of civilization on the world. It would have been interesting to have seen what would have happened if a less cold blooded, stolid, viciously selfish people had come out on top instead."

Bigley thought about it. "Hey, what would happen if we threw a monkeywrench in the works?"

Cold went through Steward Flexner. He rose to one elbow and glared at his large companion. He reached out for his glasses and put them back on. "Don't *say* anything like that, you idiot. Don't even *think* it."

"Don't get in an uproar, Stu. What's the matter?"

"Bigley, listen to this," the other ground out earnestly. "We don't do anything, absolutely anything, to effect history. We make no changes, whatsoever, to change the flow of the space-time continuum. Temporal travel is in its infancy. In actuality, we haven't the vaguest idea why it works. Our best brains are going around the bend trying to explain how it is we can return to the past. Men like Doctor Black are pragmatic, however; we don't *understand* temporal travel but we are utilizing it. There are paradoxes involved that are mind shaking—but we're utilizing it. And we're treading with the gentlest of care. Why do you think producers like Jake Kellerman aren't allowed to utilize temporal travel unless accompanied by scientists such as Leslie Black? Why do you think that you're not allowed out of my sight, so long as we're here in the past?"

"Ahhh. It's a lot of gobbydygook, anyway. How do you know that just being here we're not changing the past? Some little thing we don't even know we're doing that'll finally parlay up into some major change? Suppose one of those spearmen today was looking over at us, when he shouldn't and as a result got an arrow through his gizzard. Okay, in this case he doesn't have any

children and they don't have any. By the time you get down to our age, there's millions of people that might have been his descendents. All not alive."

"That's what I keep telling you," Flexner rasped. "We must not do anything that will influence history. The very fact that we exist is indication that we have not done anything to the past to influence it so that the future comes out differently. I tell you the whole field of temporal travel is a madhouse of paradoxes, but we must take every precaution to see that history, so far as we know it, is not altered."

"The more I hear about all this, the less I know," the ex-marine cameraman grumbled.

"Well, just leave it lay, as the saying goes. Actually, so little is known of this period, or any of the periods we visit, that whatever happens we can assume is what truly happened, even though it conflicts with written history."

"That went by too fast for me to catch."

"What historians write and what really happened are two different things. When we went back to tape the battle of Marathon, we found that the Greeks outnumbered the Persians, Herodotus to the contrary. Further back still, we found that although the Trojan War, indeed, was fought, that it wasn't over a beautiful woman, but trade routes. No such person as Helen existed, Homer to the contrary."

"I still don't get it."

"Well, forget about it. Tomorrow we'll be back in Rome. The big climax we're waiting for should be coming off any day now. But just remember, we're not interested in destroying the future by altering the past. That's why we've brought no weapons, no instruments save those that we'll take back with us."

"Okay, okay, let's put in some bunk fatigue, Stu. It's a long march back tomorrow."

Flexner took his glasses off again and put them aside and snuggled back into his sleeping bag. He tried to forget the day's gory combat. In his time, Steward Flexner had signed many a peace petition.

At the exact moment Bigley and Flexner were hunkered down before the camp fire, industriously chewing away at poorly barbequed kid, Jake Kellerman and his scientific adviser were dining on more sumptuous fare and under more comfortable conditions.

Kellerman called from his couch, "How you doing, Doc?"

Leslie Black said, "I'd be getting more to eat, I would venture, if this buxom equivalent of a geisha girl didn't intercept half of what I reach for."

Jake chortled. "I don't do any better than this back at the studio. What's the bit here, Doc?"

The antropologist-historian sighed, let his eyes go around the circle of couches placed about a central table in the dining tent of Lars Porsenna and his staff.

"The Romans picked up their habit of eating stretched out on couches from the Etruscans, along with a good many of their other customs. However, the Romans, at least in the early days, ate alone.

Women weren't even allowed in the room. But the Etruscans were less straitlaced when it came to women. They ate like this, in couples, stretched out on couches together. Man and wife, or, if unmarried, a man and a . . . ah, geisha girl."

From the other side of the table Lars Porsenna called out jovially, "And what do our strangers speak of in this unknown tongue, oh Lucumo Kellerman and Haruspex Black? Perhaps our cheer is not to your refined tastes!"

Jake Kellerman answered in his astrocious Latin, which he, in common with Bigley had learned in a several week crash program. Black and Flexner, the scientific members of the four man temporal travel team, were already grounded in the language.

He said now, in the same bantering tone, "The food is for the gods, Lars Porsenna. Never have we eaten such fare. What is this delicate meat I don't seem to get enough of?"

"Umbrian ham," young Mamilius, the rex of Tusculum and chief ally of the deposed Tarquins called. "A special manner the Umbrians have of treating it."

"Ham!" Kellerman said.

Leslie Black chuckled. "When in Rome, do as the Romans do."

"Yeah, but we're not in Rome, we're ten miles out."

"Ummm," Black murmered thoughtfully. "But, come to think of it, I'm not sure that your religious forebears had established their taboo against the pig, this far back in history."

"I'm still not sure Mama would approve," Kellerman said distastefully. "Let me try some of that duck."

The two girls assigned to the strangers from the future arose and, to the strains of flute music, coming from behind a cloth partitioned off section of the tent, danced for the edification of the assembled diners.

Under that cover, the producer whispered to his adviser, "Who's the old geezer next to Astur?"

Black looked over and grunted. "That old geezer, as you call him, is the central figure of this whole, ah, hassle. He's the disposed rex of Rome, Tarquin Superbus."

"Oh, yeah. This war is to try and get him back on the throne." Kellerman looked over at the oldster who was heatedly discussing something with the gigantic lucumo of Luna. "At his age, you'd think he'd be satisfied to go into retirement. Who'd want to be king at eighty or ninety?"

"The prerogitives of the Roman rex weren't exactly those of a king," Black said. "Besides, the issues are greater then commonly realized. Supposedly, this matter came to a head because young Sextus Tarquin assaulted Lucretia, the daughter of Spurius Lucretius and the wife of Collatinus, both prominent members of the Brutus party which was in favor of discontinuing the office of rex and establishing a republic."

"Brutus?" Kellerman said. "I thought he was the one who slipped the knife to Caesar."

"This was an earlier Brutus," Black said. His voice had taken on the tone of a pedagogue addressing a class. "In actuality, the real motivation is the world-wide conflict

between the Greeks and Persians."

"Greeks and Persians! What the devil have . . ."

Black went on. "The Etruscans are allied with the Carthaginians, who in turn are in the Persian camp of Darius. The Greeks of *Magna Graecia*, southern Italy, support their homeland. Rome is neatly situated between the Etruscans and Greeks of the south. The Tarquins supported the Etruscans; Brutus and his party, the Greeks. In truth, it is one of the great turning points of history. While the Greeks and Persians fight it out, Rome will first become a republic and then slowly conquer all Italy, ultimately take over all Etruria, ultimately eliminate Carthage, and eventually step in and take over Greece and the Near East including most of what is now the Persian empire. Very critical turning point in history."

"Yeah. Well for me it's going to make a nice action show, the hell with history."

The scientist gave up and changed the subject. "How would you like to have Astur, over there, back in Hollywood? You could revive the Tarzan series."

Kellerman looked at the massive warrior chief. "Tarzan! If I had him in Hollywood I'd revive King Kong. What are they yaking about over there?"

Black said sourly, "I wouldn't know. In our era, no one is familiar with the Etruscan language. However, I assume they're planning tomorrow's action. Astur and his men are going to try and take the Janiculum by surprise."

"Holy smokes! Tomorrow! I hope Biggy is all set up to get the action from the Roman side."

Black said, "I imagine that Flexner will have him on the scene. He is as familiar with the story as I am."

By the time that Biggy, the cameraman handling the Roman side of the tapeing, had arrived with his historical technician, in the forum Boarium and on the east side of the Sublicon bridge, the word had spread through Rome that the Janiculum was under full attack and thousands of the citizenry had gathered anxiously to stare in that direction and possibly to seek what confidence they could in their elected leaders who were gathered at the Rome end of the great wooden bridge.

Both consuls, the energetic Poplicola and fat and pompous Marcus Horatius, were there and both of them wan of face. Already, numbers of wounded were falling back from the Janiculum heights, and the trickle was becoming a stream. And already stragglers were beginning to appear amidst them, weaponless men who showed no signs of wounds and only shameful faces and shifting eyes.

Marcus Valerius and other senior officers were consulting with the consuls and could seem to come to no conclusion.

Bigley had the camera set up to cover the action, and took a few feet of tape of the refugees, the crowds, the conferring officials. He growled to Flexner, "They ought to throw in their reserves. What're

they waiting on, for the enemy to bring the action to them? Who's general here?"

Stu Flexner, fascinated, muttered, "That's not the way it happened."

"Oh, great. Whose side are we on? Somebody ought to do something. What's going on up there?"

"We're not on anybody's side," Flexner said. "We're observing history. To foot the bill, we're taking some tapes."

Bigley turned to a spearman who had just crossed the bridge, a bit of cloth pressed against a bad arm wound. The stream of wounded and stragglers had become a flood and the bridge was packed with soldiers who had thrown away sword and shield the better to flee the battle.

Bigley said in his astrocious Latin, "What goes on up there? Are the Etruscans over the wall?"

"Over the wall?" the soldier said bitterly. "They were over the wall at first dawn. Some giant of a lunatic who yields a sword full six feet long managed to work his way up the outer wall during the night with about fifteen followers. How they avoided the guards, I couldn't say. Most likely some traitor paved their way. Whatever the reason, at dawn they were on the wall, signalling to their comrades below. We counter-attacked immediately, but to no end. I tell you, that giant is a madman. Before we could sweep his small unit away, the others had run up scaling ladders and came pouring over like a flood. The greater part of our forces had hardly got the sleep from their eyes before it was a matter no longer of defending the wall but hand to hand combat with Porsenna's picked men."

"Astur," Flexner muttered under his breath.

"What?" Bigley said.

"Nothing. That man better have his arm looked after."

There was no ignoring the situation now. The Romans were in full retreat and so badly defeated that they seemed incapable of fighting a rearguard action. Throwing away their weapons, they ran at what speed they could command for the bridge and the city beyond. And it became obvious that the full forces of Porsenna were now on the Janiculum since cavalry came riding down to lance the wounded and those who dropped behind.

The consul, Popicola, had come to a decision and men went scurrying in all directions. Marcus Valerius yelled, "Put everybody to work at pulling down the bridge! Axes, crowbars, wedges, hatchets, anything that can be used. If they over run the bridge, they'll be in Rome before night."

High on the Janiculum hill began to appear the flashing of well shined helmets, swords, shields and spear points. Lars Porsenna's forces were reforming for the assault.

Flexner was looking about worriedly.

"What's the matter?" Bigley said. He had refocused his camera half a dozen times, now he was jittering at the wait.

Flexner said, "Where's Horatius?"

"Where's Horatius? There he is, over ther, talking with that other big mucky-muck, Poplicola."

"No, that's Marcus Horatius, the

consul, the senator of the Horatian gens. I mean Horatius Cocles."

"You've got me," Bigley said, still once again checking his equipment. "They oughta set up some delaying action if they expect to get this bridge down before the bad guys arrive."

"Horatius was the delaying action," Flexner said unhappily.

Down over the hill at breakneck pace two horses were approaching the other side of the bridge. They banged to a halt. Jake Kellerman and Leslie Black slid from the steeds, began unloading equipment in fumbling speed. Kellerman slapped his tripod into working order, looked around hurriedly, located a position. The antropologist gave him what assistance he could. They were both in a sweat, and obviously already exhausted from the morning's work.

Jake Kellerman turned, swept his eyes through the crowds on the other side, located Bigley and Flexner, cupped his hands to his mouth and yelled, "Where's Horatius?"

Flexner yelled back, "I don't know."

Leslie Black shot a worried look at the advancing waves of Etruscans. The full host of Lars Porsenna was now pouring down the hill.

He called over to Flexner, "He's *got* to be there."

Flexner, his face pale, dashed over to the consuls. Both were screaming directions to the workers under the bridge who were desperately pounding, chopping, levering with more fervor than science.

Stu Flexner snapped, "Where's Horatius Cocles?"

Marcus Horatius shot a withering glance at him. "Stand aside, we're too busy to deal with you, no matter your confounded gold. Can't you see? The bridge must go down."

"Where's Horatius Cocles!" Flexner snapped back urgently.

"Who?" The other was puzzled.

"Horatius. Horatius Cocles, the captain of the gate. He and Herminius and Spurius Lartius."

"Never heard of any of them." The fat consul turned brusquely away.

Flexner, his lips pale, staggered, rather than walked, back to his camerman. His eyes were wide.

"What the devil's the matter?" Bigley said to him. "You look like you've seen a ghost."

Flexner said, unbelievingly, "Polybius, Livy, Dionysius and Plutarch all tell the story. They differ a bit. Polybius has it that Horatius fought alone. Livy and Dionysius say he had two companions. But they all tell the story."

He cast a despairing look across the stream at the onrushing Etruscan host, then down at the wreckers working away on the massive beams. They had hardly begun.

"What's the matter with you?" Bigley demanded. "Stand ready to hand me tape. Those guys are going to be over the bridge in minutes. Man! I haven't seen action like this since . . . what are you staring at?"

"What'd you do in the Marines, Biggy?"

"What'd'ya mean, what'd I do? I did everything. Two hitches. Last couple of years I taught bayonet drill and judo."*(Continued on page 40)*



MANHATTAN DOME

By BEN BOVA

Illustrated by DAN ADKINS

Air pollution is a growing problem that no one seems to be able to solve. We direct the planners and engineers to read the following story for a solution. Or is there one . . . ?

MANHATTAN Dome glinted brilliantly in the late afternoon sun, a billion-dollar bubble rising above the stench of the gently billowing crud that wafted in from Jersey. Nearly a mile high at its crest, the mammoth geodesic dome stretched from the Palisades to Queens, from the Triboro Bridge to the Battery. The low-flying brown clouds of pollution, that Mayor Wagner had once moaningly called "a thousand-mile-long sewer pipe that empties on Manhattan," were neatly turned away by the Dome's massive curving flank.

And inside the Dome . . .

A dumpy old lady walked tiredly down Tenth Avenue, through the unbelievable smog, wearing a kid's space helmet over her head. It didn't help much. Her eyes still burned

and her chest felt like a mazurka for sandpaper and grinding wheels.

Under the tenderly irrigated palm trees in Central Park, the usual group of anti-Dome demonstrators was being joined by a noisy "Bring Back Weather" crowd armed with THINK SNOW and VARIETY IS THE SPICE OF LIFE placards.

Not many blocks away, a skinny teenager collapsed, wheezing and gasping, on the sidewalk. Eighty-seven monoxide-spraying automobiles growled by his prostrate form before somebody called the police.

On the bandstand of a plush downtown hotel ballroom, his handsome leonine head turned slightly sweaty by the TV lights and other things, High Ivory faced a battery of microphones and cameras and announced his retirement. The Father of Manhattan Dome, the man that *Time* had once called "a cheerful megalomaniac who's made old Robert Moses look like a small-time real estate developer," kept a carefully-modulated not of reproach in his voice:

"It is true that the Dome has not freed Manhattan from the blight of air pollution. But this is not the fault of the Dome itself. There are reasons, too numerous to enumerate at present."

"And he doesn't wanta get his throat slit by the City Council," a reporter at the back of the crowd whispered to a note-taking colleague.

Ivory went on: "To some, it may seem that I am quitting in the face of danger, throwing in the towel when the going gets rough. This is not true! I've done all I can to make Manhattan Dome a reality. It exists, and it can be made to work properly. I have brought it into being, and for that I am both proud and humble."

"Good trick," A TV cameraman mumbled to himself.

"The problem with the Dome now is an engineering and political problem. I am neither an engineer nor a politician. I am, and have always been, a scientist. Therefore I am returning to the academic life. I have accepted a position on the faculty of a great midwestern university."

He paused dramatically, then added, "But before I leave, I want to venture a prediction. I predict that the engineering problems of the Dome can be solved. If not this year, then later. And the political problems can be solved also, if this city's politicians will act with forthrightness and vision. And someday—perhaps someday in our lifetimes—every major city in the United States, in the free world, in the entire world! Every major city will be domed over, protected, safe from weather and pollution, happy and prosperous!"

To a man, the press corps struggled with an urge to hurl a well-salivated rasberry at Hugh Ivory.

And in the office of the Chief Dome Engineer, inside Manhattan Dome itself, Ed Fairman felt his insides coiling as he re-read the harsh yellow telegram from Washington.

"That's it," he said to his secretary. She was standing beside him as he sat at his desk.

"Is it really final?" she asked.

Fairman grinned: a lopsided, punchy kind of grin, like prizefight-

ers get when they've been knocked down too often.

"Final enough," he said. "Washington's going to start tearing down the Dome on the first of the month."

It was one of Ed Fairman's misfortunes that he had a face that looked constantly young and cheerful. It was a pink, scrubbed-looking face, topped by short-cropped light blond hair. His darkrimmed glasses slanted a bit askew across his face, adding the impression that he was busily on the move, even at a moment like this, when he knew he was stopped dead.

"Well," the girl said shakily, putting her hand on Ed's shoulder, "I guess it's not really the end of the entire world."

He looked up at her. "You can always go back to dancing at the Club Casbah."

That was where he had met her, when she had been working her way through secretarial school. Her name was Teresa—Tracy. Not the prettiest girl Ed had ever seen, but close enough. Her hair was long and dark, her figure somewhere between a movie starlet's and a fashion model's.

He could see that Tracy was fighting to hold back tears, so he got up and cupped a hand around her chin and kissed her.

"Now be a good girl and see if Robbie Foxcroft is in his office. I want to talk to him."

"He said he'd be out 'til three or four."

Job hunting, Ed thought.

"Okay, I'll make a swing around the duty stations. Page me when he shows up."

As he walked toward the office door, Tracy called out, "Ed . . . what about you? They'll be wrecking you when they tear down the Dome."

He forced a grin. "That's what the knot in my stomach is for. Anyway, it'll make your father happy. I think he's about ready to tear down the Dome with his bare hands."

Manhattan Dome was actually two huge geodesic domes, one set inside the other. In between was a plastic-walled world of its own, with offices, power generators, gigantic air blowers and conditioners, and even quarters for the technicians who tended the equipment.

Down in the reception lobby, a group of sightseers was milling around, waiting for their tour to begin. The lobby was pleasantly cool, the air clean and faintly scented, with restful music easing out from hidden speakers. The noise and dirt of Manhattan were shut out by solid double doors, something like the watertight hatches on a submarine.

The microskirted receptionist smiled dutifully as two determined men wormed through the crowd and stalked up to her plexiglass desk.

"I'm the chairman of the Greater New York Evolutionary Society," boomed the bigger of the two.

"Now wait a minute, I was here first. I represent the American Longevity Society."

The Evolutionist was a massive specimen, with an insistent voice and a craggy face topped by a bristling shock of straight white hair. He had a Roosevelt-type cigaret

holder clamped in his teeth, and the Longevity man's nose wrinkled at the smoke. Longevity was almost as tall as the Evolutionist, but rangy instead of broad. His face was toothy, bony, gnomish.

Evolution turned on his opponent, "You're one of the nitwits that wants this Dome torn down!"

"You're damned right," Longevity shot back, nervous and nasal. "It's *got* to be torn down."

"But don't you realize what this Dome's accomplished? Of course you don't, you poor ignorant soul."

Evolution teetered on tiptoes for a moment, looming over Longevity and savoring his superior wisdom. The sightseers, who had been standing around admiring the photos and cutaway drawings of the Dome that lined the lobby walls, all turned to watch the show.

"This Dome has simp-ly advanced human evolution," said the Evolutionist at last. "That's right. It's forcing the weaker species to either get out or die out. That's a tremendous achievement. A great contribution to mankind's future. Hard on the weaklings, of course, but then evolution is a tough old taskmaster."

Longevity started to object.

But Evolution plowed straight on. "I know it's rough on some individuals. But evolution isn't worried about the individual. This Dome will foster the development of a superior race, able to breath pure carbone monoxide, impervious to germs! Magnificent!"

"No, no, no," Longevity shouted. "The Dome must be torn down. At once! Longevity is dwindling inside the Dome. Since the Dome was completed, actuarial statistics show that the average Manhattan resident has lost three-tenths of a day off his life expectancy. More than seven hours!"

"Poo . . ."

"The time itself isn't as important as the *trend*," Longevity twanged, with nasal passion. "Life expectancy should be increasing. This damnable Dome is shortening it."

"Only for the feeble."

"Nonsense," Longevity snapped. "Your own life has been shortened as well as everyone else's."

Blowing a cloud of smoke into his enemy's face, Evolution answered cooly, "Your life may have been shortened; not mine."

"Yours too!" Longevity insisted, with a cough.

"The hell it has!"

"The hell it hasn't!"

While they argued, Ed Fairman was more than a mile away, checking one equipment station after another, chatting with the technicians who ran the Dome, trying not to let his feelings show on his face.

He walked slowly down a long, curving corridor, near the Dome's outer wall. Sunlight streamed through the geodesic framework, warm and constant. The only sounds were the clicking of his own footsteps on the plastic flooring and the occasional musical voice of the girl on the public-address system, paging people.

He was toying with the idea of running up the elevator and going out on the catwalk, half a mile high, to watch the harbor and the traffic scurrying along the Narrows Bridge.

Then the girl's voice called his name.

"It's not our fault!" Robbie Foxcroft said with some heat as he handed the telegram back to Ed.

Foxcroft was sitting before Ed's desk, together with Dr. Ida, the Dome's chief scientific advisor now that Hugh Ivory had officially resigned.

Foxcroft was the ideal welterweight: wiry and fast-looking, handsome in a sharp, thin-faced way. Chief administrator for the Dome, he had a mind as tenacious and convoluted as an insurance lawyer's.

Dr. Ida was the oldest forty-year-old Ed knew. He looked lumpy and abstract, with vague squinting eyes and whispy hair covering his fast-balding pate.

"It's not our fault," Foxcroft repeated. "We told the City Council before we started building the Dome that they'd have to prohibit automobile traffic inside Manhattan once the Dome was finished. We warned them this would happen."

"I know," Ed said tiredly. "They were my calculations you were using, remember? But the blame doesn't matter anymore. The Public Heath people want the Dome torn down. Do they have the authority to do it?"

Foxcroft squirmed but admitted, "Yes, they have. Unless we do something to make them cancel the order."

Do something, Ed thought. They had done a lot, but none of it was any good. They had put up with city department bureaucrats, building inspectors, committees from Washington, unions demonstrators. They had installed fire sprinklers every ten feet on the inside surface of the Dome, to placate the Fire Inspector and the plumbers. They had been forced to foot the bill for special ultraviolet streetlights after lobbyists from the giant electric light corporations persuaded the Council that Manhattan's residents should have a chance to get suntanned, despite the Dome.

"Do what?" Ed asked sloud. "Nothing we've done so far has helped."

Dr. Ida made a sound halfway between a cough and a giggle. "It's a terribly interesting problem. The people inside the Dome make more pollutants than the Dome's machinery can pump out of the Dome. The obvious solution, then, is to get rid of the people."

Ed blinked at him.

"The Federal Government could do it. We could turn Manhattan into a national research center for air pollution." The distant glimmer of a Nobel Prize flickered in his near-sighted eyes.

"I don't think," Ed said evenly, "that the Government would buy it."

Dr. Ida shrugged. "Pity. Make a good study."

Foxcroft brightened. "We might get Washington to force the City Council to ban auto traffic inside the Dome!"

Before Ed could shake his head, Foxcroft went on:

"Or get them to ban cigaret smoking . . ."

"Robbie, if people are willing to

risk lung cancer, a city ordinance isn't going to stop them from smoking."

"Well, maybe we could issue gas masks . . ."

"Robbie!" Ed raised his hands in a policeman's *stop!* gesture. "We're up against the wall! People are dropping in the streets. Ivory has abandoned the ship. The Mayor won't even talk to me; his office claims he's rehearsing for the *Tonight* show. The Governor's staff has taken him off to Colorado to talk to Nixon again. Washington's sending a wrecking crew here in another ten days. If we can't stop the pollution—not talk about it, but stop it—we're dead!"

Their silence was funeral.

After they left, Ed remained at his desk, staring at the wall chart across the room. An ominous black line snaked across it, climbing constantly higher from January to the present, passing a green level marked SAFE, passing a yellow area marked JERSEY LEVEL, and nearly touching the red LETHAL LEVEl mark.

He thought back to that City Council meeting nearly two years earlier, when he had shown them a very similar chart. Except that then it had been his prediction, not yet reality.

And then the other side had their say. The experts from Detroit, from the cigaret companies, from the oil and gas interests, from Madison Avenue. They were gray-templed and gray-suited, very prosperous and very knowledgeable. They showed that Ed's calculations were wrong.

The Council believed them. At least, the Council voted an approval for the Dome, but vetoed the proviso that would have prohibited automobile traffic. Ten mature, smoothly-experienced experts against one blond kid. The Council knew which way to vote.

Even Hugh Ivory had said afterward, "You know, Ed, they might very well be right. After all, your calculations were based on the most pessimistic assumptions possible."

"Are you going to sit there all night?"

He looked up. Tracy was standing at the office doorway, her handbag under her arm.

"Come on, I'm cooking for you tonight, remember?"

The underground parking garage was nearly deserted, but not quite.

As Ed and Tracy walked toward his car, they were approached by a frail little guy with a blue cloak that dragged on the oil-stained concrete, a scruffy beard, a static electric haircut, and a genuine shepherd's staff.

"You are of the Dome," he spake portentiously.

Ed nodded warily and tried not to inhale. The guy smelled like a genuine shepherd.

"This monstrous affront to man and god must be destroyed! This evil plastic cocoon must be burst asunder! Return man to god's own nature. Let him breathe free once more!"

Ed turned to Tracy with the hopeless look of a hounded prisoner in his eyes.

"Man was not meant to live shut away from the blue of the sky, shut away from the grandeur of the stars!" The little guy was flailing his arms now, jumbling the cloak around his neck. "Remember the Tower of Babel. Remember! I am the prophet. The prophet of doom!"

Then he turned and walked away, muttering to himself.

"He's no prophet," Tracy said. "He's a loss."

It didn't cheer Ed. "When he sees tonight's papers he'll know."

Tracy lived in a ground-floor flat with her father, a round-bellied, white-haired, hook-nosed Old World father who still watched Ed as though he was a threat to the family's honor.

"Gotta water bill today," he said as soon as they stepped into the living room. "Dam' water cost more'n da rent anymore!"

Tracy said, "Now Poppa, don't start that again . . ."

Ignoring her, he grabbed Ed by the arm. "C'mon, I wanna show you."

He towed Ed out to the kitchen and waved an arm toward the windows that looked out on a tiny garden patch.

"Looka dat! Dyin', every last t'ing. Grapes, tomatoes, flowers, all dyin'. An' you know why? No rain, 'atsa why. An' why no rain? Dam' Dome, 'atsa why no rain! How'm I gonna keep 'em watered? I'm no millionaire! What'm I s'pposed to do, move to Central Park?"

"It's not Ed's fault," Tracy said.

"It'sa Dome's fault. Oughtta tear it down, stick by stick."

Ed sank into one of the kitchen chairs. "That's just what Washington's going to do, Mr. Santini. Tear it down. Starting the first of the month."

The old man's eyes widened. "What? You mean it?"

Ed nodded.

Santini dashed to the cabinet under the kitchen sink and pulled out a wine bottle. " 'Atsa best news I heard since I went on Social Security! Tear it down! Good! I help 'em, if dey need it."

"Poppa, it's terrible news," Tracy said, going to Ed's side. "It means Ed's job . . . his whole career is tied up in the Dome."

"Ahhh, he's gotta education, he get another job. Here, take some wine an' cheer up. It'll be okay."

"No it won't be okay," Ed said sharply.

The old man pulled up short.

"There are a lot of things wrong with the Dome," Ed said, "But tearing it down is even more wrong. Once it's torn down, you'll be getting that chemical gunk from Jersey that ruined your garden three years ago, remember? And frosts, and storms . . ."

"So? No rain's better?"

"The Dome is basically a good idea!" Ed insisted. "Big cities shouldn't have to be at the mercy of the weather. There ought to be some way to control pollution. People shouldn't have to live in this filth."

Santini pulled up a chair on the opposite side of the table and put the bottle down. "Whatta you talkin' about?"

"The air," Ed said. "People

shouldn't have to breath such rotten air. The Dome is a step in the right direction, if we could only fix it to work right."

"Hey, don't you go gettin' any smart ideas. They wanna break downa Dome, find! Don't you try stoppin' 'em."

"Mr. Santini, you don't make progress by going backwards. We should be trying to make the Dome work right, not destroying it."

Banging a hammy hand on the table, Santini shouted, "You lettem tear down da Dome, unnerstand? I don't see why I gotta let my daughter marry somebody who don't lemme grow a couple flowers when I want to!"

"Poppa!"

"Don' 'Poppa me!" he snapped at Tracy. Turning back to Ed, "You maka you pick, Mr. Engineer. You picka Dome or you picka daughter. Can' have both."

Ed looked at Tracy, then at her father, then got up and headed for the front door.

Tracy caught up with him in the entryway.

"He'll calm down," she said quietly. "You know him."

"Maybe," Ed said. "But I've had enough for one day. I'm not going to spend all night arguing with him."

"He'll be all right."

"I'll see you tomorrow." He reached for the doorknob, then turned back to her. "You know, he's giving you a choice, too. Either him or me."

She put her arms around his neck. "Ed, you know who I'd choose."

"Yes. But I wouldn't want to make you leave him all alone. That would bother you a lot . . . which would bother me, too."

Her arms slid away from him. She looked troubled now.

"I'll see you tomorrow," he said.

The air conditioner in the car wasn't working right. Ed's eyes were burning, and he was starting to cough. He had boozed his way through the night. He had been very precise about it all. Instead of dinner, three drinks. Then that's all. Three drinks equals a meal. Now, well past midnight, he estimated that he had gone through all the meals for the remainder of the week, at least.

He was driving aimlessly through the nearly-empty streets, the car's headlights barely cutting the murky smog.

Aerosols, he thought. Dust, soot, sneeze droplets. Billions of tiny particles that people and cars and heating furnaces and cigarets make every day, every minute. Tons of particles, clouds of aerosols. Far too much for the Dome's machinery to suck out of the air.

As Ed waited for a stoplight, a solitary pedestrian padded by, wearing a frogman's mask with a heavy tank of air on his back.

Ed heard himself laughing. "Good thing Foxcroft isn't here," he said to himself. "He'd try to get City Council to issue that equipment to everybody inside the Dome."

Finally, Ed found himself turning on the lights in his office. He steered himself over to the desk and peered at the clock. Two-thirty. His body

seemed to keep on weaving even after his feet had stopped still.

He was humming something, he realized: an old children's song, *Rain, rain go away . . .*

But that wasn't right. It should be rain, rain, some on back.

With a thundering headache, he plopped in his chair. The telegram was still on the desktop, staring at him. Faces kept blurring together in his mind, Ivory, Foxcroft, the Mayor, Mr. Santini . . .

Something about air conditioning . . . no, air conditioners. The Dome had huge air conditioners, machines that handled hundreds of tons of air every hour.

What about it? he asked himself. What's that got to do with the price of tomatoes in Mr. Santini's back yard?

He wanted to sleep. Or at least get some aspirin, or maybe another drink. Instead, he turned to the little tabletop computer behind his desk and started tapping out some numbers.

He was still in the office when Tracy showed up for work that morning.

"Ed! You look terrible!"

He knew his eyes were the colors of the Black Watch tartan by now, and his smile completely cockeyed. But he smiled anyway.

Pulling himself up from the desk, which was littered with sheets from the computer and scratchpad notes, he said, "Come with me, young lady, for a scientific demonstration."

"You need some coffee," she said.

"And about a pound of aspirin," he admitted. "But that can wait. Come on."

He grabbed her by the wrist and took her out of the office.

Tracy trotted along behind him and watched silently, puzzledly, as he stopped at several different stations among the Dome's miles of machinery. Finally he took her to one of the observation balconies on the inside wall of the Dome.

Through the thick plexiglas window they could look out onto the rooftops of Manhattan's East Side. The UN building was off to one side, and they could see Roosevelt Drive and the upper fifties.

"Ed, what are you doing?"

He squinted carefully at his wristwatch. "In just about five seconds . . ."

It started to rain. A gentle, springlike shower began to darken the streets and send the crowds of workbound people scurrying into doorways and under the artificial trees.

He looked at her. Tracy was speechless.

"Your old man wants rain, he gets rain."

"But . . . but . . ."

It was raining only along a five-block stretch of 58th and 59th streets. No place else. Abruptly, the shower stopped. But it started sprinkling five blocks away.

Ed's grin was ear-splitting.

"What are you doing? How did you . . ."

"It's your father's idea," he said. "He started me thinking about it. Rains scrub the air, wash away the aerosols and float them down the sewers. Air always feel clean after a rain, doesn't it?"

"Yes, but . . ." Then she realized it. "The fire sprinklers!"

(Continued on page 146)

IDIOT'S MATE

By ROBERT TAYLOR

Mankind will take his inhumanity to man into space, there can be no doubt about that. What this may mean to one man is told here in a powerful first story by a new author.

RODGERS lost his last Bishop as they came together over the ridge and down into the floor of the crater, urged on by desperation. A lone Black Pawn, slunk deep into White territory and hidden, stood up from behind a rock and fired.

Rodgers felt the rumble of the explosion through his feet, and, unthinking, jetted a hundred feet into the sky to come flaming down on top of the Pawn, firing burst after burst from the angry snout of the weapon before the poor fellow had a chance to readjust his aim. Dust spouted angrily from the ground and flame belched out as oxygen spilled from the torn suit.

He stood over the ruined ground, the dark waters of anger, rage, and fear flowing like fire through his blood. His eyes blazed dark, and he could see himself standing silver and tall in the silent Lunar night, breathing heavily under the dark alien sky, the suit sucking his skin dry. Burning fires laced the sky with patterns, but they weren't the patterns that he had known since early in childhood when he had first stood under the simple stars that blazed in the cold mountain air. These stars frowned down upon him, and his eyes tried to hide from their terrible glare.

He reached out a hand to steady himself against a rock. The cold wind of vacuum threatened to bowl him over.

Flicking up to the visi-scanner, his eyes were heavy with tears, tears that had been repressed for twenty years, tears that now bubbled up from the dark well of his soul. But they did not overflow and run down his cheeks in a glistening flood. They built up behind his eyes and threatened to overflow.

Rodgers stood alone on a lifeless plain of silver dust and empty starlight, while his eyes burned with seeing too much and his brain shivered with knowing too much and his hands ached with doing too

much. Dust, that had never known the strong blowing of October winds or the soft warmth of a September morning, but only the blazing heat and the burning cold of interplanetary nights and days, lay all about him. He stood on a plain within crater walls with morning racing close behind him, close and closer with every breath drawn, with every blink of the eye. Morning two days off and coming always closer, striding like a giant with golden legs. Inevitable as death.

He saw his forces positioned on the visi-scanner in gleaming lights and wept. And he did not know whether he wept for them or for himself. His weeping had been far done, long gone, forgotten with childhood. Even in prison he had not let the tears flow. But now a strange dew formed on his cheeks, to be sucked up by the suit as soon as it formed.

You mustn't cry now, his mother said. You mustn't cry now ever again. You're a man now, and men don't cry.

Yes, Mother, he said. I will never cry again.

And the rememberance of the discarded silver shells lying cold upon the naked dust struck him hard in the chest.

Rodgers felt his numbed eyes flowing silently over the glowing figures on the visi-scanner, flowing and flowing because they had nothing else to do.

A Knight, one Rook, one Pawn.

And himself.

King.

Standing silent, he felt his heart throbbing deep within him, pulsing blood through his body, ticking softly in his wrists and in his throat. His whole body was a quivering mass that followed the throbbing and the pulsing of his heart. Why, he was almost swept away with each throb, each pulse. His legs and arms ached with a deep heaviness. He closed his eyes and felt the shores of reality, of sanity, slowly pulsed away by the pulsing of his heart.

"Rook," he whispered into the microphone, eyes pressed tightly closed against the lurking brilliance of the long, cold, interplanetary night. Colors flowed and swayed in the burning darkness behind his eyelids, burned and swayed like the waving treetops in a blowing wind.

"Rook!"

His eyes were gummed shut by drying tears, but still they opened swiftly when he felt the slight change in the visi-scanner. It burned brightly down at him.

His last Knight was gone. He could almost hear the death-scream and the shrill gasp of the lunar vacuum reaching deep into a human soul. His hands clenched tightly on the three feet of black death that he carried in them.

"Rook!" So loud, his world spun about him.

Pulling deep within himself, he withdrew from the hammering reality about him. He was gone, a nothing. Rivers of fatigue flooded over him. Only the suit, the gleaming silver suit, was left now to move and think and feel and taste and hear and smell and see. And kill. The suit absorbed him, and he merely watched while all the action flowed on around him.

From far away, a voice: "This is Rook, King."

Another voice that sounded

remarkably like his own rang out into the ether: "What's the situation there?"

"Situation? There is none. They're all gone, searching after you."

"What do they have?" He fumbled at anything for hope, for time.

"We've killed one Bishop, five Pawns—"

"Six Pawns now. We lost our last Bishop."

"One Bishop, six Pawns, one Knight."

Oh *God!* "That's all?"

"All."

"Come *help* me." It was a plea.

"We're coming. Don't worry. Been after them for half an hour."

I wonder if it's true, thought Rodgers, that at the moment of death a hypnotic command overflows the mind with purest pleasure.

The black gun pressed heavily on his hands. He thought of the black legions that were coming. Can't stay here, he felt his lips saying. Gotta move.

A mechanism deep within the suit functioned. Chemicals began surging through his blood. His mind cleared as if pure water were running over it. He stood tall and cold in his own body again. Lost muscles began to awaken to their tasks. He began running the best he could under the low strength of the Lunar gravity.

With the chemicals coloring his dark blood even darker, he was a virtual superman now.

But so were his pursuers.

Rodgers turned and fled towards the blazing Earth that had long lain unnoticed in the sky. She glowed brilliantly now, a gleaming eye in the black sky, watching him in more ways than one.

All right, he thought, we'll give them a chase a last farewell. We'll run beneath the Earth all shining bright. We'll show them that we can still die like men. We'll give them a dance, a dance by earthlight.

Give them hell, said his father. Knock them and rock them and shake them 'til they don't know what to think. Always do the unexpected, and don't let them catch you being stupid. Doesn't matter if you win or die, but if you win, win hard, and if you die, be expensive.

Yes old man, he cried silently to the still winds of Luna.

Rodgers kicked out a burst from his rockets. He was lifted bya genie and carried a hundred yards by an invisible hand. Another burst landed him like a dust mote.

The thing to do now, he thought, is to make distance, get far away from this place where two dead beetles clutter the ocean shore. Get somewhere far away and hide, and wait, and get them all, one by one, when they come to seek you out.

He ran and ran, and then rocketed. He ran some more and rocketed again. The dark anger aching in his blood, and up and down, and run, run.

My men will never get them in time. Doomed, he thought. Doomed and damned and doomed and double damned.

He fights best who knows he is doomed, said a voice somewhere deep in the misty memories of his mind in a gentle tone that sounded like October rain.

Mountains and craters and seas

and plains floated all about him, and the great sky crushed heavily upon his shoulders.

Caught in flight, time fled quickly past him, leaving his body untouched. Each heartbeat took a thousand years, each breath an aeon. Once he saw his own face reflected off the faceplate for a millenium by a freak of starlight. Wild eyes glared up at him from darkness, bones sticking out from under the skin, new metal teeth gleaming brightly. Scar tissue burned pale, silver beads stood frozen on his face.

So low in cheek and high in bone,-

Johnny I hardly knew you . . ."

Sang the ancient song deep within his mind, echoing out of the black forgotten chambers that lay oh so deep down within his mind.

Somewhere deep within the suit, a mechanism stopped functioning. Another took its place. His legs were cut away from him. In midstride he felt his body sucked away to lie suspended deep in the suit while he still went on and on.

He tried to move the lost body.

He fell face downward and lay gleaming on the desert sand. His weapon slipped from his grasp, bounced and lay still just before him.

Get up, said his mind, weaking. Fatigue began to pour down upon him in a massive flood his legs refused to move.

Wait a little while, said a deeper part of his mind. It's just clearing your blood for you. You can't go on forever with just chemicals. They build up and poison you.

His fevered brain pounded in his head.

"What did I do to deserve this?" he whispered to his fates.

"High Treason, Captain. That is what you committed."

Rodgers raised his eyes. The black judge stood before him just as he had been during the trial, his black robes unruffled by wind, his black hair burning with hate, and his dark eyes blazing as one who had sold himself to the Fiend. He stood just in front of Rodgers. If he could only move his arm just a little . . .

"High treason against the government of Terra."

"I did no treason!"

"Come, Captain. You allowed five enemy ships to pass your position, with your permission. And when your commanding officer tried to blast them, you attacked him."

"They weren't enemy ships. Refugees from the asteroids. Women and children. I inspected every ship myself. He was going to murder them all."

"Come, come, Captain."

"The Jovian Moons are so far from us. We don't need them."

"Enough. You were lucky to be sent to Devil's Rock and not to Gallows Hill."

Rodgers looked up at the black judge's eyes. They gleamed wickedly.

"May God have mercy on your soul, Captain."

Bunching all his muscles, Rodgers made a sudden lunge for the black judge who smelled of sulfur. He was a shaft of silver lightning and moondust kicked high into the not-air. He closed about a darkness. His fingers ached heavily on the gun and he was firing madly. Rock chipped

into a flaked and powdered oblivion as the explosive shells ate into it.

Rodgers knelt in the center of a spray of rock dust, cold reality biting at him again. The plain was empty.

No! he screamed to the silent seas. You've got to control your mind. If you start hallucinating, you're lost.

He stood tall. Think. You've got to form a plan. It's been done before. One man can beat six if he's smart enough.

If they would just give me time to *think!*

Jogging along, part of his mind thought about the Chess Tournament. There weren't many rules. It was merely controlled slaughter for the enjoyment of the blood hungry masses back on Earth. Every move was watched by cameras flown over in rockets, magnifying eyes peering hungrily. No real rules, not really. Just a certain form that was followed. You could do anything you wanted, even hide.

Yes, hide, let them seek you out, and then kill them.

Only, every twenty-four hours, he thought (almost laughing), each suit emitted a five minute radar wail, and then everybody knew where everyone else was. How deliciously ironic. The game was always rigged, and the people of Earth wanted action.

Six hours, he thought. I've got six hours before the signal. Then I'll run and hide, wait, run and hide again. I'll beat them yet. Keep one step ahead of them.

There had never been any consideration that Rodgers would be anything *but* a King. Only the most notorious criminals were made Kings. They had more to fight for, they always put up a better show. And their anguish was a beautiful thing to behold. They would never do as mere Pieces or Queens. No, they must suffer to be rewarded, and suffer doubly, for they were responsible for fifteen other lives, and they depended on those lives for their own. It was especially terrible when you were gentle.

But they were rewarded. And that was why he had even considered becoming a King.

He remembered the day that he had agreed. The warden had called him to his office, and he had been escorted there by armed guards. He had pushed open the door and stepped in, fear eating at him . . .

He eased himself into the chair. The warden looked at him, smiling.

"Hello, Rodger. I hope they haven't been treating you too badly."

Rodgers ran his tongue around, up and down, over his broken teeth. His hand ran softly over his scarred and twisted face. A faint mist of pain hung over everything, but he had grown used to the pain and it was forgotten. But not the smiles on the faces of the guards as they crept up around him and struck with their dark truncheons. That was blazed into his mind.

"Ah yes, Rodgers. Yes, your record is admirable."

The warden spun around in his chair.

"How would you like to get out of here Rodgers? Of course you would, of course. You aren't an evil person by nature, you just made a mistake at such a time that you were forced

to pay for it. This place bothers you, so of course you want to get out. And you can."

His hand moved against some papers on his desk. "The Chess Tournament, Rodgers. You can volunteer. The winners are always pardoned. Yes? Good. Here, this paper. Sign right here."

The warden smiled, and suddenly his smile changed into that of the black judge.

Rodgers screamed into his microphone.

Rock exploded behind him, chips flashing past him. He fell and rolled in the dust and rock. Dizzy, he lifted his gun and fired at the first glint of silver that he saw.

The Black Knight lifted off, the black of his horse helmet shining strangely by earthlight. He came roaring down on top of Rodgers, firing madly, insanely.

Dust and rock shot up all around Rodgers. His left hand suddenly blazed with pain, and the thin hiss of escaping air tore at his ears, but he paid it no heed. Holding the gun tight in his right hand, he got off three quick shots, then jetted away at a steep angle.

The ground heaved, and the rocks all about reflected the sudden glow back to Rodgers.

His left arm was all pain now. A rock thrown by an explosion had taken the hand neatly off at the wrist. Grunting, he tightened the wrist joint until the suit was sealed again, then he capped the mangled limb with a device thoughtfully provided by the manufacturer.

He seemed to be standing outside himself.

No. loss, he thought. If I get through this alive, I don't need it, and if I—

The stars swung in front of him, and he knew that he had fallen down.

The blood rushed through his body, throbbing, throbbing. His whole left side burned with pain. He felt three sharp gasps slip through his lips. A sickly dampness flowed on his forehead.

Rodgers searched the pimpled sky. Were there any cameras on him now? Undoubtedly. He could almost see the flash of rockets as a flight of cameras went over. The kill-lust was in the air now, they were closing in on him. On Earth, they were waiting for him to do something clever, to prolong the action as long as possible, and then to die.

He' show them something.

Deep within the suit, a mechanism became aware of what had happened. Chemicals slipped quietly into his blood. The pain ebbed away. A warmth settled about his stump and the red flow stopped. The muscles of the suit were his muscles. The suit was his only strength.

The suit lifted him up, made him scan the horizon. Nothing yet, but they would be coming soon. There was no possibility that the Knight had failed to report Rodgers' position and solitude.

Eyes shifting helplessly to the visi-scanner, he wasn't surprised to find it blank. Everything was gone now. His only hope lay in himself.

Run and hide, run and hide.

A slope there, to his right, rising suddenly from the lunar surface. "Over the mountain," he said to the suit.

He felt amazement as his limbs swing smoothly within the suit, as he had thought they could never do again; and then he was rocketing up, once, twice, three times, again and again, and over the top of the rising slope. He was about to rocket again when his foot suddenly failed to find a place to stand.

He fell into darkness.

Rodgers stood outside the body, looking down on it. It lay sprawled across the moon surface, one hand stretched out, fingers clutching uselessly at a gun that had slipped from them and fallen inches away.

Pitiful driven thing, he thought.

He became aware of someone standing near him. A man, tall, his hair dark but ready to burst into greyness, eyes grey but with a power lurking behind them.

"Hello, Father."

"Hello, Son. Looks like they've about run you to ground." The voice sounded like soft October rain.

"Not yet. I can still become master of the situation."

"You're outnumbered, you know. How many does Black have? six? seven?"

"I am no longer such that I can't control my environment. *I* control my fate. Once at Thermopylae, Father, three hundred Greeks held off a host of Persians. If I am to die, I will die fighting."

His father smiled, gesturing. "Up there, they're thirsting for your blood. Don't give it to them; make them take it away from you."

"Once at Thermopylae, Father."

"The Greeks were eventually defeated."

"Only through treachery."

"You'd better get up now, Son."

"I will kill a Queen for you, Father."

Rodgers crouched behind the rock, watching the Pawn as the tiny figure slinked about the plain.

You won't find me there, little man, his lips whispered softly. Look up here.

He was filled with a terrible urgency. Time was hurried now and he knew that the chase was coming his way. The pace was accelerating, and somehow he couldn't help feeling that it all might be over in seconds.

He crouched, listening to the humming sound that his suit made.

The figure below moved closer, started up the hill.

Rodgers held his breath sharply, as if the Pawn below him could hear the breath puffing in his lungs.

Closer yet.

Now!

Rodgers reached out and grabbed. His left arm was almost numb, but he could still use it to pull the man hard against him. He stood and slammed the Pawn against the rock, slammed him down again. Then he rammed his gun against the chest of the suit and fired twice.

The explosion twisted the gun from his hand as fire leaped out of the hole torn in the Black Pawn.

A look of most beautiful ecstasy

was blazed forever on the Pawn's face.

Rodgers picked up the Pawn's weapon. His own had been ruined by the explosion. This one didn't have as much range as his own, it barely spat the shells out, but it would have to do.

He stood tall, breathing heavily. His left arm was completely numb now, but he could probably use it if he had to. Silently he blessed the suit that fed chemicals mother-like into his blood.

Oh God, what now? Slowly his agonized mind formulated a plan, a childish plan it seemed, an almost futile plan, one that had but little chance of success.

But he would have to take the chance. He was a falling man, clutching at spiderwebs, and he would have to chance anything that might work in his favor.

Carefully, he hunched the dead Pawn up about the rock, holding him up with another rock, in a mock attempt at concealment. From a distance, they wouldn't notice the rounded crest of a Pawn.

Now, to run fast and far? or wait and see what victims this trap collects?

The decision was made for him.

The rock shattered as a powerful shell from a powerful gun ate into it. Rodgers was thrown back, badly shaken. He snatched up his weapon and looked at his assailant, fear quaking his heart.

The Queen stood at the bottom of the hill.

Ice water flowed over him. Then his cover was gone as the shattered rock finally crumbled away and began to slip downhill in small pieces. The dead Pawn slid down a few feet and stopped. Rodgers pointed the gun with his right hand and fired, the kick jolting him badly, but the Queen was out of range.

The Queen was coming up the hill now, his dark eyes boring straight at Rodgers.

Rodgers fired again, again.

A shell exploded in front of him.

No use running now.

The Queen was at the extreme range of good control. He took a step and Rodgers aimed for the foot in desperation.

The shell exploded beneath the foot as it was coming down. The Queen was thrown off balance and started falling foreward. He flung his shoulders back, overbalanced, and fell backwards, dropping his gun.

Rodgers leaped, kicking the gun away. He grabbed the Queen as he was trying to get up. They grappled, striking at each other. Struggling, they rolled downhill. Rodgers felt his own gun torn from his grasp and flung away.

Time had no meaning now. All he knew was that this instant was forever and the moment of his death was striding towards him rapidly.

The Queen flung Rodgers off, and savagely he brought the capped end of his left arm down against the faceplate that gleamed darkly below the eagle-head of the Queen. It bounded off, leaving just a tiny crack in the tough material. Not good enough to release the trapped air.

The Queen struck back and Rodgers went down. Then the great

silver figure leaped up and started running for its gun.

Rodgers did the only thing that could possibly save him. He stood and kicked on his rockets, coming down, down, down on the Queen without stopping his fall.

There was a puff of air, and pain tore through his body.

Stupid, stupid. Your legs are shattered.

He lay on his back, staring up at the starry sky. God of my fathers, are you there?

The pain, the terrible pain.

Suit, where are you when I need you?

But the mechanism would never function again. It was shattered beyond repair.

There was someone standing near him.

"I'm cold, Father. It's all so still. I can feel myself."

He blazed out his soul on the lifeless moon.

A flight of cameras overhead, arcing down close, crashing as they transmitted their pictures.

Someone was coming close now, closer.

Rodgers arched his head back and found Earth glowing sweetly in the sky. He smiled. Then he remembered the dark smile of the black judge and the smiles of the guards and the joyful smile of the laughing warden. And he saw the smiles on the faces of the people of Earth as they leaned foreward to see his body ripped apart. He saw his torn suit spill its shivering contents onto the dead moon.

Then he saw himself blasting the Pawn and the Knight, and again the Pawn, and hurtling down upon the Queen. How many had he killed with his own hands?

"Am I as bad as they are, Father?"

A shadow blotted out the sky.

"I don't hurt any more, Father."

Something pressed hard against his chest. "Mate," said a voice.

"Father, I killed a Queen for you!"

The stars blazed cold.

The End

Don't Miss

ROSS ROCKLYNNE'S

THE SOUND OF SPACE

In October FANTASTIC On Sale July 23rd

Time travel—or time trouble?

TIME BOMB

RAY RUSSELL

CORYDON Kelley's Chronomobile was quite frankly modelled after the Time Machine of H. G. Wells in that it, too, was made in the form of a vehicular conveyance—in this case, a 1960 Studebaker Lark convertible, revised and edited, standing on blocks in his garage, its wheels and many other parts removed, its yellow paint rather badly scratched by several years of unscheduled contact with Corydon's garage and other immovable objects during its career as a medium of conventional travel (Corydon could not parallel park to save his soul, usually reversed when he wished to go forward and vice versa, invariably signalled left when turning right, and was generally a lousy driver).

He was one hell of an inventor, though, and his Chronomobile worked. After a couple of short trial runs into last Tuesday and next Friday, he decided to take the big plunge and visit the era that had always fascinated him most: the prehistoric. Packing the trunk of the Chronomobile with a week's supply of canned fruit cocktail, Campbell's Chili Beef Soup, saltines, and Diet-Rite Cola, he closed and locked the garage door from the inside, climbed into the driver's seat, fastened his seat belt, adjusted the tempus lever, slid the key into the converted ignition, and was on his way.

A blur, a swirl, a ringing in the ears, a psychedelic kaleidoscope of color; the garage vanished; the gyring images settled and focused, and the Chronomobile came to rest in the midst of a dense jungle.

Insects buzzed and dived. Far-off animals screamed and roared. Pungent flora aromas flared Corydon's delicate nostrils. He fearlessly threw open the Chronomobile door and turned to step forth, like stout-Cortez, a stranger in a strange land, an adventurer more intrepid than any the world had ever known. But he couldn't move!

This was due to the seat belt, which he now unbuckled. *Then* he stepped into the steaming world that surrounded him.

A barely human snarl froze him in

his tracks and a naked bearded man leaped from a patch of foliage, wielding a murderous wedge of fagged rock.

Corydon nimbly sidestepped just in time, and his crude attacker went sprawling, struck his shaggy head on a tree trunk, and fell unconscious to the weed-choked ground.

Corydon bent over him, studying the man with scholarly interest. "Not Neanderthal," he mused aloud, "some species more advanced, possibly Cro-Magnon . . ." He pried the piece of rock from the man's hand—and, in a moment, began weeping hot tears, for he knew now that his long-awaited journey to the prehistoric world was what is known in theatrical jargon as a bomb. Oh, the Chronomobile worked all right, he could return and start out again, but still . . .

"How like me," he moaned. "How typical of me." He could have sworn the tempus lever had been in Reverse—but, obviously, it had been in Drive. The weapon in the man's hand was no rock, but a piece of a cornerstone, with *A.D. 1975* clearly stamped on it, He had traveled not into the past, but the future, and he blubbered bitterly, not for the sad destiny of Mankind, but for his own bumbling ineptitude. "I always was a lousy driver," he sobbed.

The End

WHERE'S HORATIUS? (continued from page 20)

From across the Tiber, Leslie Black yelled frantically, "WHERE THE HELL'S HORATIUS?"

"He's right here," Flexner whispered softly.

"What'd'ya staring at me like that for?" Bigley said.

Steward Flexner stooped and grabbed up a short pike from the ground where a retreating Roman had dropped it. He thrust it into the other's hands. "Listen," he said, a hysterical urgency in his voice. "That bridge *has* to go down. All history is changed if it doesn't. Now get over there with your Twentieth Century bayonet drill and hold them."

Bigley's mouth was hanging open.

Kellerman and Black, continually shooting glances over their shoulders at the approaching Etruscans, yelled in unison, "Where's Horatius!"

Flexner yelled back, "Not Horatius. Horace! The damn historians got it wrong again!" He gave his companion a push toward the bridge.

At long last it came through. The bridge was empty of fleeing Romans now, as he staggered across it. On the far side, he straighted, squared his shoulders. The Etruscans were coming in fast. In the fore, a squad of twenty or so, in a rough triangular formation, laughing jubilantly at the prospect of a quick victory and a sacking of the town, charged the bridgehead.

He held his pike up in salute and yelled, "I am Marine Staff Sergeant Horace Greeley Bigley and challenge to personal combat, a chief of equal rank!"

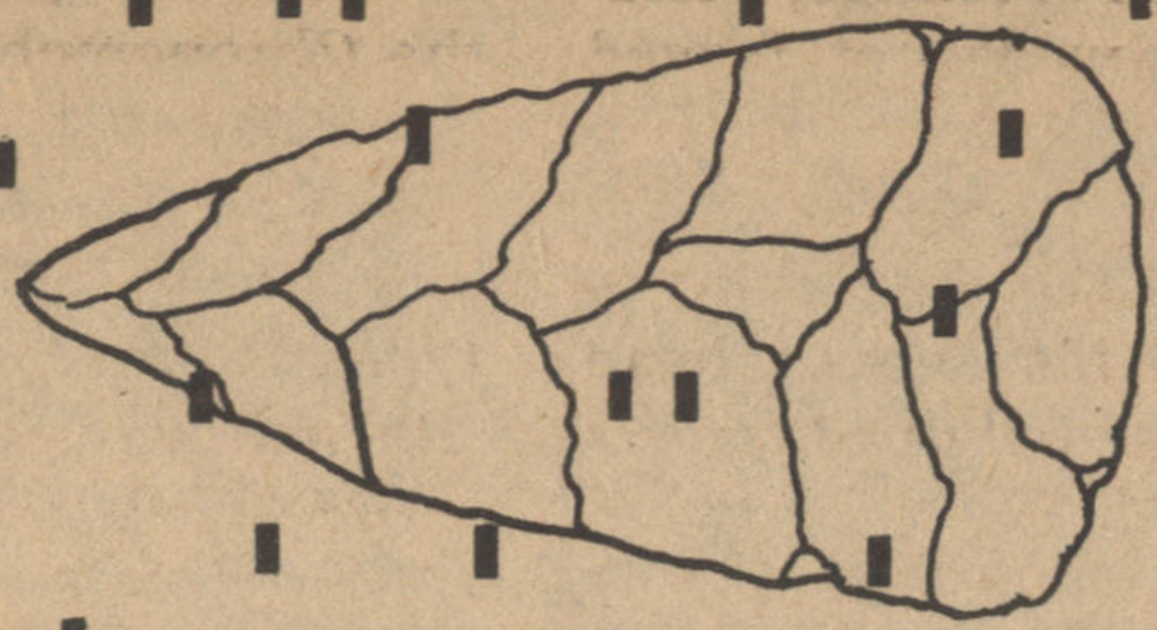
The Etruscans, in surprise, slid to a halt. But then they began to beat their swords on their shields and to yell, "Astur! Astur!"

The End

ILLINOIS INSTITUTE OF TECHNOLOGY

SCIENCE OF MAN

by LEON E. STOVER



NAKED APE OR HAIRLESS MONKEY

HAIRLESS man is. Ape he is not. Man also shares many features in common with monkeys. Now that Desmond Morris, in THE NAKED APE, has let the world in on the secret of man's primate heritage in all its unlovely details, it scarcely will enlarge upon the scandal to ask if we are not rather hairless monkeys. Just who *were* our ancestors—our *hairy* ancestors?

The story of human evolution is best told by starting with the familiar end product and working back toward the unknown.

Oddly enough, man's family, the *Hominidae*, contains only one species—our own. Most zoological families contain a variety of types. Think of the *Felidae*, with all its lions, tigers, leopards, pumas and pussy cats. Other forms of man are known to us only from the fossilized remains of extinct ones. The turnover of these extinct hominid forms, one evolving out of the other, is the history of our family.

But our family history is just the beginning. Where did our family line come from? What is the origin of the *Hominidae*?

Our immediate ancestors are easy to get to know. Modern man *(H. sapiens)* emerges into the world at the end of a wide trail of bones taking us back through the primitive half-brained men *(H. erectus)* to the ape-men *(Australopithecus)*. This hominid trail covers three species over a period of three million years. But where did this whole collection of family members originate? The answer takes us back to something like 36 million years ago.

The origin of our own species is quite recent, as geological time goes. The oldest men classified as *sapiens* come from the Mindel-Riss interglacial deposits of Europe, anywhere between 150,000 and 200,000 B. P. (Before Present).

They were the ancestors of the Neanderthals, whose fate has been told in the February issue of this magazine (NEANDERTHALS, RICKETS AND MODERN TECHNOLOGY).

One step back takes us to the half-brained men, *Homo erectus*. This name lumps together a number of widely scattered finds throughout the Old World that formerly were accorded a jumble of taxonomic and place names, such as Pithecanthropus erectus (Java Man), Sinanthropus pekinensis (Peking Man), Rhodesian Man, and the Heidelberg jaw.

Workers in the field who discover human fossils are born splitters; they love to assign new taxons to their finds. Back in the laboratory, the lumpers in white coats go to work; there they try to sort out the new discoveries and reduce them to a few established species.

All the human fossils from Europe, Africa and Asia now lumped under *H. erectus* are identical with modern men from the neck down. The differences are in the head; the cranial capacity is half that of *sapiens*.

The half-brained men were still human in our own terms. The males went hunting, operating out of a base camp, just as the men in our society go out on the job and "bring home the bacon" for wife and children. The base camp was fixed around a fireplace, which defined the center of the group's hunting territority. Indeed, it was the half-brained men who pioneered hunting as a way of life. This involved teamwork, language, tool kits, the control of fire, and a sexual division of labor. So successful was this way of life, which began around 900,000 B.P., that *erectus* pursued big game in grasslands and open valleys throughout the Old World as far north as the January frost line. This is quite an accomplishment for a tropical primate that got its start as a fruit plucker in the rain forests of Central Africa.

Going back yet another step to the ancestors of *erectus* takes us to the African ape-men. Their feeding habits and general level of social life were not recognizably human. The ape-men were pack-running scavengers and carrion eaters, each individual feeding himself as the pack moved through its daily foraging rounds.

In appearance, the ape-men were slight creatures, with heads small enough to hold a brain the size of a chimpanzee's. It is the large face-to-brain ratio that makes the ape-men look apelike. But they already looked like humans in other respects. They walked upright on platform feet. Their hands were free for tool using. And the head was fairly well balanced on the spinal column, the starting point for brain expansion in the later species of man.

Maybe the ape-men were hairless. Certainly the half-brained men were. Hairlessness in man, together with plenty of sweat glands, is part of a cooling system which can reduce body heat by means of water evaporation on

the skin surface. It is a system which must have evolved soon after our hairy, forest-dwelling ancestors came out onto the open plains to seek food there in competition with the big cats and jackal packs. Actually, direct competition was avoided. The early hominids went about their business at a time, the hot daylight hours, when their rivals slept in the cool shade of den and lair.

The big question is, How did the hominids come to occupy the plains? An answer is hard to find because with the ape-men the trail breaks off—no more fossils for almost the entire stretch of the Pliocene.

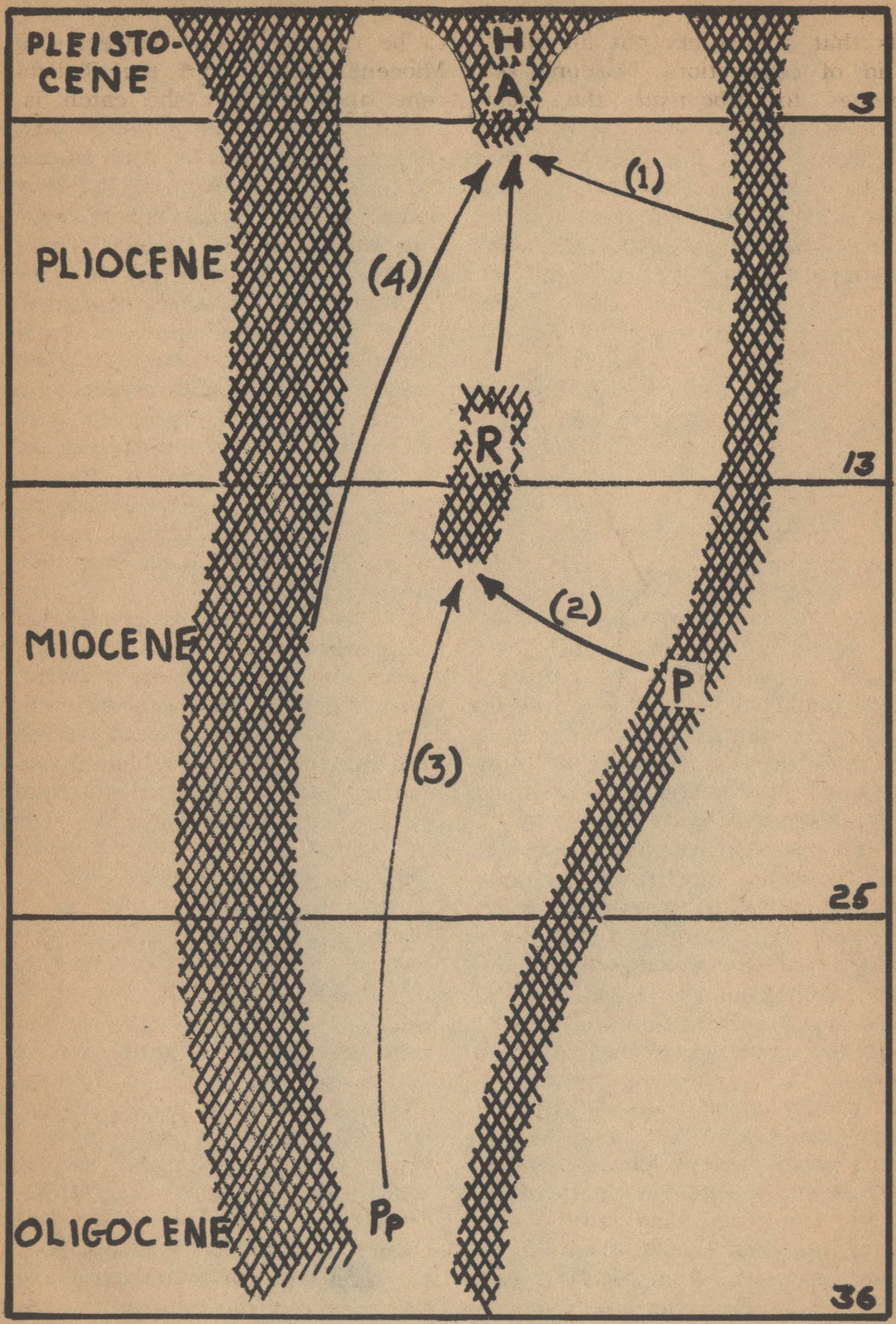
One attractive theory accounts for the absence of hominid fossils in Pliocene times by arguing that there *weren't* any hominids in that Epoch! The ape-men are simply descendants of Pliocene apes within the last 5 million years. This is Theory One (1), as shown in the accompanying figure.

Theory One has some good evidence from comparative anatomy in favor of it. Apes are brachiators; they hang by their arms when moving through the trees, swinging hand over hand. The two Asiatic apes are best at it, the gibbon fast and acrobatic, the orang-utan slow and systematic. The two African apes, chimpanzees and gorillas, are heavier and spend more time on the ground. But all show the specialized hand of the brachiator—a long narrow palm, long hooked fingers, and a short stubby thumb. Tarzan's thumbs can only get in the way when leaping from branch to branch, unless he gets them amputated.

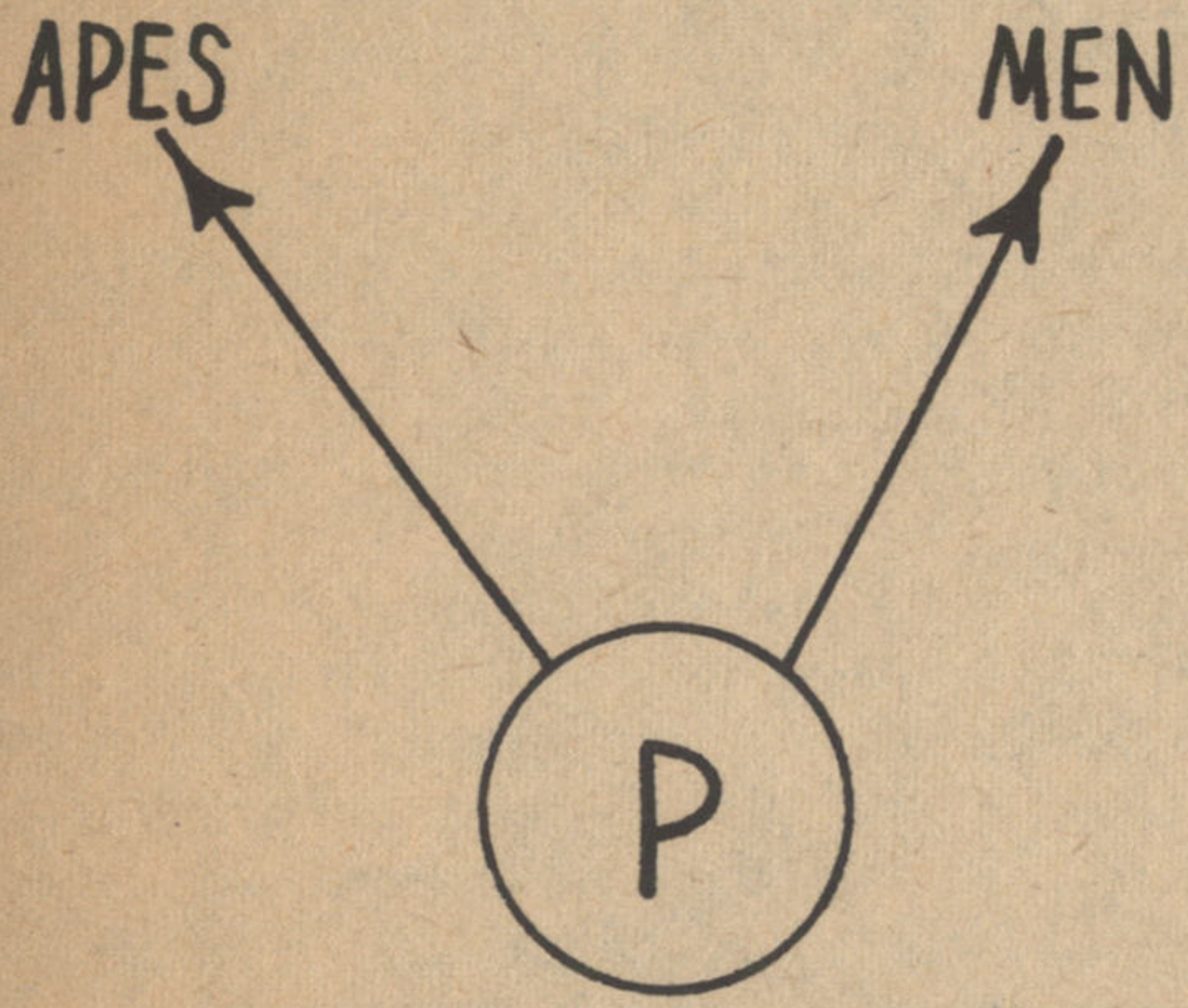
The upper part of the human body resembles a brachiator's. Man holds himself upright when standing on his feet. Apes hold their bodies in the same upright posture when hanging by their hands. If the ancestors of the ape-men were in fact apes, it would go a long way in explaining why man today has big biceps and can rotate his arms over his head. Theory One gets the ape-men out on the plains by letting the Pliocene apes release their grip on the overhead branches, drop to their feet, and pick up bipedal locomotion from there.

Things are not quite all that easy, however. It is true that man's build points to a brachiator somewhere in his past. But there are some monkeys, such as the langur, which *also* do some brachiating. More difficult to get around is the fact that when man gets down on his hands and knees to crawl, when going through a low tunnel or in shingling a roof, he walks his hands on his knuckles like an ape, not on his palms like a monkey. Also observe how a public speaker leans forward and rests his knuckles on the lectern. But then again there is that long thumb of Tarzan's, which goes with the broad, grasping, manipulating hand of a monkey, not with the hooked hands of the apes.

Perhaps the most popular theory among anthropologists today is Theory Two. It has the virtue of explaining two sets of fos-


O.W. MONKEYS
MEN
APES
PLEISTO-CENE
H A
3
PLIOCENE
(1)
(4)
R
13
MIOCENE
(2)
P
(3)
25
OLIGOCENE
Pp
36

sils that almost cry out for some kind of connection. The one set belongs to *Proconsul*, the most famous of the Miocene apelets, discovered in East Africa by L. S. B. Leakey. Indeed, Theory Two is his. He believes that Proconsul is the common ancestor of apes and men, thus:

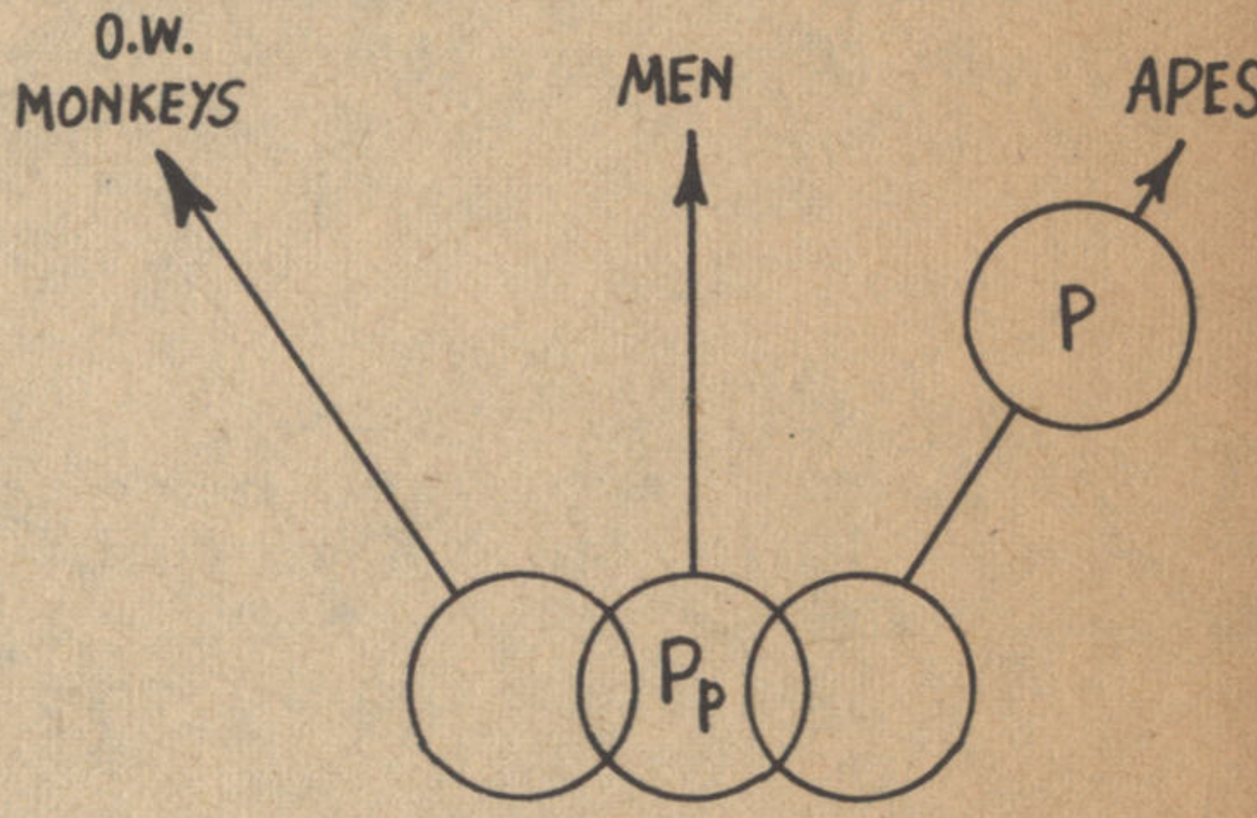


He reasons that apelets, not yet apes and not yet men, are just the right type of grandfather for both. In *Proconsul* the face is flatish and the canine teeth are not very big and pointy. In the ape line coming out of the apelets the face takes on more muzzle and the canine teeth grow like fangs; in the human line coming out of the apelets the face is shortened and the canine teeth are reduced to the dainty proportions of the incisor teeth.

The other set of fossils belongs to *Ramapithecus*, a series of small jaw fragments and teeth from late Miocene to early Pliocene deposits from India and Africa. *Ramapithecus* would *seem* to be the ideal link between the Miocene apelets and the Pleistocene ape-men. But the catch is, *Ramapithecus* is *too* human to play the part. The muzzle and canine teeth are retreated to halfway house. Very well for Theory Two. But supporters of Theory Three contend that an earlier form, *Pliopithecus*, dating all the way back to Oligocene times, has a shorter face and smaller canine teeth than does the apelet *Proconsul*.

That means that the apelets are already too specialized in the direction of the apes. Therefore, the origins of the human family have to be pushed back even further.

If the origins of the *Hominidae* are to be pushed back into the depths of the Oligocene Epoch, then it follows that the human family got its start at the same time the families of the Old World monkeys and apes came into being. Thus:



Naturally, Theory Four—that man descended from monkeys—can be ruled out. Monkeys have four cusps on their lower molars,

apes have five. These features were established early in Oligocene times, and mark the beginnings of the two lines. Teeth are slow to change and are very good indicators of genetic affinities. Man has five cusps on his lower molars, putting him closer to the apes than to monkeys. But if Theory Three is correct, the dental similarity of apes and men is so anciently rooted as to matter little.

The surprising thing here is that the evolutionary history of man turns out to be much longer than anyone ever suspected. Behind the confusing technical terms lies a fascinating story. It is a story not merely of changing teeth and jaws and limbs. It is the story of ecological change in the total life patterns of a whole series of animals.

The problems of understanding human origins is basically the problem of finding out how a quadrupedal primate, walking on all fours on the tree branches of a tropical forest, was able to evolve into a bipedal primate, walking erect on its two hind legs over a plains landscape. This change took place in Africa when the forests acquired the plains for a neighbor. These two environments have continued to border on each other ever since a change of climate for the drier in Miocene times removed much of the forest cover in central Africa, leaving broad savannahs in its place.

Theory One allows that some apes struck out for the savannah-land as soon as brachiation had developed enough to allow them to hang by their arms in an upright position, ready for their legs to take over bipedal support. But brachiator's are already too specialized to make the switch. Theory Two claims that Miocene apelets ventured onto the savannahland as soon as it appeared, later to give rise to the hominid family. But *Ramapithecus* is a hominid. A representative of man's family already was on the scene when the plains opened up!

The only other primate fully independent of the forest environment is the baboon. Baboons made their appearance with giraffes, gazelles and other animals newly adapted to plains life. Baboons are quadrupedal *ground*-dwelling monkeys whose ancestors were quadrupedal *forest*-dwelling monkeys. They required little change in their locomotor habits to make the switch. But the change was much more profound for the bipeds leading to man, and must have been in the making for a long time before changes in the climate deforested areas of the Miocene landscape.

What is unique about man's bipedalism is that he can stand still on his two legs as well as walk, run and hop. (Birds are bipedal and hop, but any schoolchild—Aristotle was an exception with his "featherless biped"—can see that a robin is not a monkey.) Quite a number of other primates can walk or run on two legs. But only man can stand in place and swiv-

el his hips, as in hurling a rock or in striking with fist or club. Monkeys can run on their hind legs, even though they are built for walking on all fours, because they are light enough to avoid mechanical difficulties in this exercise. Not so for the African apes, who sometimes walk when transporting food or nesting materials. Walking for gorillas and chimpanzees is awkward on two counts. One, they are top heavy. All the big muscles for locomotion are in the arms, which are much elongated compared with their short, dumpy legs. Thus, when a gorilla is knuckling along on all fours, his body is tilted up at about a 45 degree angle. Two, apes are heavy—period. It would be difficult to re-engineer a gorilla skeleton to habitually take as much as 200 kilograms of body weight on two under-powered legs. That is another reason why Theory One may be dismissed. The forest ancestors of the first plains dwelling bipeds must have been small and lightweight creatures—perhaps no bigger than a domestic cat.

The earliest known primate biped is *Ramapithecus*. He is known to be a hominid—an upright walker belonging to the human family—because the jaw fragments indicate a jaw shaped in a parabolic curve. Such a parabolic dental arcade, unlike the U-shaped jaws of monkeys and apes, goes with a head fairly well balanced on a vertical spine, which in turn goes with habitual bipedalism. No doubt, *Ramapithecus* could run, walk and jump with two legs, but probably not stand still on them. Such a limitation is to be expected in a transitional form. The ability to move about in the open, with the eyes above the tall grass to scan the horizon for predators, would have been a decisive advantage for the first primate scavengers out on the plains. The importance of sharp eyes for human evolution has been stressed in the April issue with DOGS, DOLPHINS AND HUMAN SPEECH. Baboons, close to the ground, get their warning signals about enemies from the panic of the zebras and giraffes with whom they associate.

The final problem in tracing human origins, then, is to find a suitable ancestor for *Ramapithecus*. It would be helpful if we had a whole skeleton. (Or would this be cheating? The game seems to be, how much can we learn from the least evidence?) There is no way to find out if his arms were longer than his legs like the apes, or if his legs were longer than his arms like man.

However, we *do* know that man himself resembles *monkeys* in this respect. The formula relating the proportions of the hindlimbs and the forelimbs in primates is called the *intermembral index*. It is calculated this way:

$$\frac{\text{length of humerous} \times 100}{\text{length of femur} \times \text{tibia}} = \text{intermembral index}$$

If the answer is 100, then both the front and back limbs are of the same length. If the number

goes over a hundred, the forelimbs are longer and some degree of brachiation is indicated. If the number is less than a hundred, the hindlimbs are longer, indicating quadrupedal locomotion. Man fits into the following series:

		average intermembral index
orang	apes	172
gibbon	apes	165
gorilla	apes	138
chimpanzee	apes	136
langur	monkeys	110
guenon	monkeys	106
H. sapien ——	man	88

In terms of body structure related to locomotion, man outmonkeys the monkeys!

Does this mean that man is descended from monkeys after all? If he were, he'd have four cusps on his lower molar teeth. Naturally, man's low intermembral index of 88 reflects the fact that his legs have lengthened as they become more specialized for bipedal locomotion. Adaptation to walking on the ground with a two legged gait has tended to mask the index of the original four-legged condition. But there is a limit to the masking effect. The original condition must have been more monkey-like than ape-like.

Human origins go back to a time when neither monkeys nor apes had yet evolved as separate types. Could we trace the ancestors of *Ramapithecus* back into Oligocene times, we would soon find it impossible to distinguish between the human line, the ape line and the monkey line. All three lines emerged as three different successful ways to exploit the advantages of being a primate.

One of the main principles of evolution provides that, if an animal is adapted for one environment—and it never is 100% adapted, else no change ever were possible—it usually is partly adapted to get along somehow in any neighboring environment. The question, What is the origin of the hominids? must now be phrased another way. Something like this: *What kind of primate was living what kind of life in the forest that made it possible to get along in a plains environment as a biped when the plains opened up next door?*

The answer to this question is hypothetical, but not unreasonable. Here, then, is a flyer at what *Propliopithecus* must have been like.

Picture a small, lightweight, lemur-sized primate that can walk along tree limbs on all fours, holding on as he goes with four sets of hands. Sometimes it propels itself forward with its hindlimbs (like any ordinary lemur or monkey) and sometimes it pulls itself ahead with its forelimbs by grasping branches ahead of an above its head (like that unusual, semi-brachiating monkey, the langur). Imagine also that it drops to the ground

regularly. Its habits of semi-brachiation serve it well there, holding its upper body easily erect to look for danger over the tangled underbrush as it makes a broken field run across the jungle floor. Perhaps our ultimate ancestor is just a bit more omnivorous than the other, mainly vegetarian primates, filling out his diet with frogs, lizards, worms, grubs and termites to be found only on the ground. Or perhaps the newly emergent monkeys are dominating the upper reaches of the trees with their claim to the best leaves, fruit and seeds. With the slow unfolding of the Miocene Epoch, the plains encroach upon the forest, easing up to it with a gradual border zone of shrub trees and parkland. What does it matter to our little forager if he extends his feeding activities into the border zone or all the way into the open grass lands? He can still watch out for himself, peeking around the shrubs, over the grass; and much the same kind of carnivorous snacks are to be found out there, as well as succulent roots. It would be easy to take advantage of the new food resources: the after kill of the big cats, the new born young of the plains animals, the injured adults . . .

Eventually, evolution would select for longer legs and platform feet—*Ramapithecus*. The hands would be freed for using tools and weapons—the apemen. With body fully erect, head perfectly balanced, the brain could expand to meet the challenge of increased manipulation of the environment with tool kits, fire, language, team hunting —the half-brained men. And so on, until modern man came to occupy all environments on the globe with an ever expanding technological inventory.

So man is neither a naked ape nor a hairless monkey. His line of ancestry evolved apart from the monkeys and apes. He is not simply a depilitated version of either one of them. Man is what he is—a nudist who made it on his own.

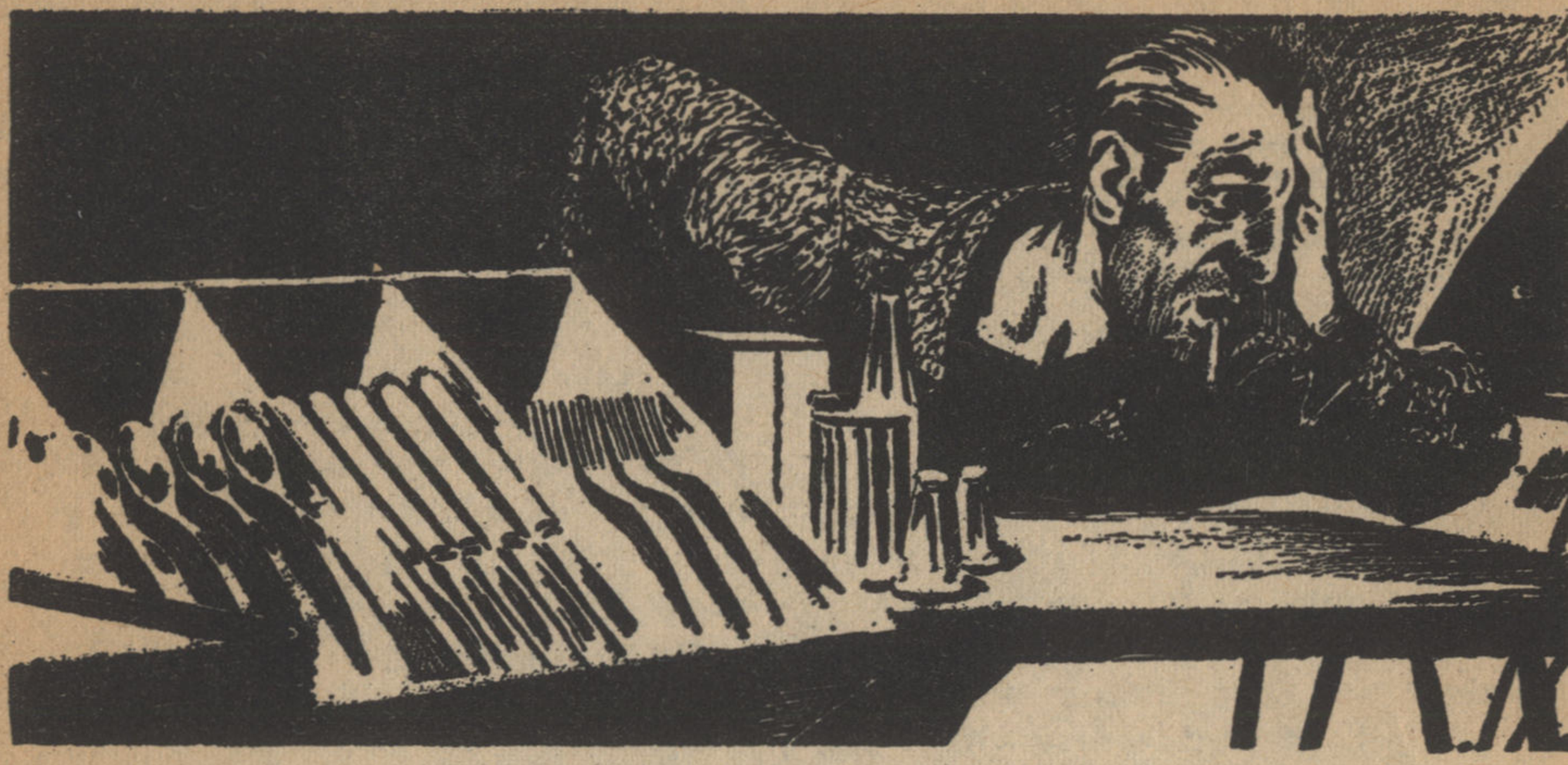
The End

Don't Miss

FRITZ LEIBER'S New Gray Mouser

The Two Best Thieves In Lankhmar

IN AUGUST FANTASTIC NOW ON SALE



THE PATTY-CAKE MUTINY

By WINSTON MARKS

After years spent in space, the crew of the Discus had long since become inured to hardship, danger and fear. And then one day the ship landed on a new planet where the grass was like human hair and the earth oozed thin red blood. No wonder Murphy, the toughest miner ever to swing a pick, reverted to infancy in an effort to escape the horror of God's Head!

IT NEVER occurred to Slapper Kansas that a certain maternal instinct was an important ingredient in his genius as foreman of the six-man prospecting crew attached to the *Discus*. Indeed, his position of authority was more tacit than official, and he maintained it largely by virtue of his free-swinging, open-palmed hands that could break a Venusian watermelon in two as easily as most men could halve a ripe peach.

Slapper's great hands hung from thick, red-haired arms and a pair of shoulders even a pro, or prospector, looked twice at before sounding off.

Copyright 1955 by Ziff-Davis Publishing Co.


EMERGENCY
AIR LOCK

That these hard-calloused slabs should be called upon to play patty-cake with 220-pound Balls Murphy was among the most remote, unconsidered probabilities aboard the *Discus*.

It was in the early days of extra-T exploration, when man had done little more than count Alpha Centauri's 24 assorted planets. The lush, wicked life-forms that teemed on most Acey planets had long since discouraged all but a small army of fewer than a thousand prospectors who roved in crews of four to eight men, subsidized by several Earth corporations. The company put up the ship, facilities and a two-man ship's company, and the pros staked their lives. They worked on shares, and the goal was *kegnite*, a rich uranium ore in which this system abounded. Earth's great power plants were starving for radioactives, but personnel was the greatest problem.

Mortality was so great that the unmanageable element that did risk their necks was a hard-bitten lot of fools who would some day be glorified as pioneers—some day, but not yet.

At the time of the *patty-cake* incident, Slapper Kansas was having more than his usual trouble keeping peace in his crew. Instead of the estimated 118 days, planetfall on Alpha Centauri VII wasn't made for almost five months. The magnetics gave out on the last half light year, and they had to come in on jet deceleration which lacked the inertia-less effect that interstellar, magnetic-propulsion afforded.

Conkie Morton, who conked out under anything more than a gee and a half, was almost dead by the time they drew atmosphere. And Butch Bagley, Pokey Gannet and Sniffer Smith, were giving Balls Murphy the silent treatment. The over-long trip, it seems, had caused them to break their sacred rule against gambling in transit. Out of sheer boredom they began playing with Balls' cubes which he carved out of a pick-handle, and the inevitable happened. Balls had won the three men's anticipated profits from the shares mining.

Sniffer was so outraged he couldn't keep his mind on business, and the *Discus* circumnavigated the planet three times before he finally concentrated on the sounding instruments enough to get a marker down on a *kegnite* lode.

Sniffer had flunked out of

metallurgy school in his youth, which automatically put him in charge of most technological functions of the crew. But his name derived not from his ore-detecting abilities so much as from his literal, olfactory talent. Sniffer could smell animal scents and noxious gases rods away. After a few unwashed weeks on an alien planet his life was a miserable effort to keep upwind from the rest of the crew.

"About damned time," Slapper rewarded him.

Sniffer's sensitive nostrils quivered as he looked down on the grassy tangle. "Lookit that hairy mess, would you. I can smell the stink clean through the hull."

Ignoring the idle complaint Slapper barked into the mike to the pilot. "You can back up and sit her down. Sniffer got a marker down finally."

Conkie groaned in his hammock as the ship slammed into four gees de-ac and reversed course. As the motion eased off he opened his eyes and peered down through the bottom ports. His face was pale from hours of retching, but his eyes were clear. He found the bright, yellow marker-stain that Sniffer had shot onto the surface. "Looks like some sort of deep grass mostly. Make it out, Pokey?"

Pokey Gannet's eyes weren't so keen, but his botanical curiosity caused him to provide himself with field lenses. These now hung around Balls Murphy's neck, another acquisition from the crap game. Balls was sulking, evincing no interest in planet-fall. "I can't make out nothing but blue-green," Pokey said with a glare at Murphy.

"Anyhow," he added, "I ain't in no rupturing rush to go muckin' around down there. I spent my shares already."

"Value received," Balls grunted, juggling the wooden dice with one hand and scratching one of the pendulous little knobs of flesh of his cheek with the other. The knobby spheres that gave him his name and grotesque disfiguration each contained a submicroscopic parasite that had baffled Earth doctors. It wasn't contagious, they announced, and they claimed success in arresting the disease, but Balls said they itched like hell. They were always pink and inflamed from his incessant scratching.

"We're on marker and coming down," Slapper told them. "Balls, you stay with Conkie and help him get on his feet. Rest of you get into your

leathers and let's look around."

Normally Slapper was reluctant to leave Conkie behind on these original reconnaissances, because his extreme visual and hearing acuity was largely responsible for the fact there had been no mortalities since he joined the crew eight years ago. However, the plain below them seemed an uncommonly harmless *veldt* of swaying grasses.

The jets cut out as the still-functioning, secondary proximity-mags took over and cushioned the landing, which was unusually gentle. The speaker hummed, and the captain spoke to them: "Don't get into trouble. The mate and I will be tearing down the main drive, so we're here to stay for at least ten days."

"Don't worry yer tinsel head over it," Slapper retorted. "These slobs never yet loaded the *Discus* in less'n two weeks." He tightened the belt of his slick-worn, suede waders and snugged the gray, leather jacket to a tight fit at the waist. He popped the seal on the main port, swung open the inner and outer doors and yelled for Sniffer. "Take a smell, man, and give us the word."

Sniffer came forward breathing cautiously. The meager data they had on this planet showed plenty of oxygen. The automatic analyzers showed nothing inimical. But pros were innately suspicious of the over-sensitive instruments which were known to have failed on occasion. Besides gas pockets, highly irritating and sometimes poisonous pollens existed seasonally. It was these for which Sniffer sniffed with discreetly short inhalations. After a moment he shook his head. "Funny," he muttered, "all that grass and no pollen. Look how deep it is!"

On firm ground it would have been necessary to descend a 20-foot ladder to the surface, but here the *Discus* was sunk like a huge robin in a nest, so the fronds of grass protruded level with the open port.

Spaced only three or four inches apart, the stems grew to a remarkable uniformity of length, the tips narrowing to blunt points and waving gently like a field of grain in the gentle breeze. The murky overcast limited visibility to about a half mile, and the growth extended to the borders of their vision in all directions.

"Flora or fauna?" Slapper asked. He leaned over and

snapped the tip from a stem that was about pencil-thickness in diameter. A green exudate cast a light, nostalgic aroma of freshly mowed lawn-grass among the four men.

Pokey Gannet plucked the stem-tip from Slapper's gloved fingers and touched the juicy end to his tongue. Tasting a new, extra-T plant-life form was typical of Pokey's suicidal habits of impulsive curiosity that had cost him dearly without teaching him sensible caution. He spat through the open port. "Chlorophyllic, all right. I'd say flora, the leaves certainly are, anyway."

His equivocating estimate was visibly justified by a skinful of scars of stings, bites and gashes garnered from poking about the unclassified, miscegenetic life-forms of a dozen planets. He dug a tiny triplex lens from his jacket pocket and studied the tissue closely for a moment. "Whoops! I don't like this so good," he muttered. "Surface of the stem is full of little bitty holes leading into a central channel. It's an air breather! I'd bet on it."

Butch stepped back from the port and dropped his slender hands to his guns nervously. "Dirty hypocrite! Got no business lookin' like a plant—"

"I didn't say it wasn't a plant," Pokey said. "But I ain't makin' book that it's harmless yet. Let's take it down to the lab and cut a section for the mike."

Slapper curbed his impatience. Each of his men had a specialty of sorts, and every time he bucked their advice in their individual fields he regretted it. He followed the others to the lab. They crowded around Pokey while he sliced a thin cross-section of the stem and slid it under the low power of the microscope.

Balls Murphys' voice reached them faintly. "Halloo! Where are you?"

Without thinking, Slapper replied, "Down here, Balls."

Back in the exit port Murphy tightened on his leathers, the breeze whispering in his ears. The sound of Slapper's voice reverberated in the lock chamber and seemed to come from the outside. For a moment he looked down into the waving blue-greenery, shrugged his shoulders and stepped off into the light gravity. He slipped smoothly and quickly out of sight.

In the lab, Pokey was muttering about the similarity of the tiny air tubes of the

growth to the tracheolae of certain insects on Earth. Light, staggering footsteps at the door turned Slapper's head.

"Conkie! You up already?"

"Balls is in trouble," Conkie gasped. "Can't you hear him, dammit?"

The men listened, but none could match Conkie's sharp ears. Slapper said, "I told him to stay with you until——"

"I know, I know! I sent him along. I was feeling better. But he's over the side looking for you, and he's screaming his damned head off down there! Something's got him!"

"Well, now ain't that a shame," said Sniffer in his most nasal drawl. He was nearest the door, and Slapper cuffed him aside.

"Get on it!" he snapped over his shoulder, racing up the passage to the gear room. He snatched one of the long, razor-sharp knives from the rack and dove through the port. "Feed a line down after me," he called back without looking and began sliding down the ladder, hacking stems as he went.

There was no visible trace of Balls' passage, so he kept cutting as he descended in order to let in light. Slapper was no sentimentalist, but the dread silence that now existed below him gripped his heart with cold fingers. For eight years he'd jockeyed this crew around space without a fatality. Sure, they'd all lost a little blood, been gouged and stung, sucked at and half-strangled by the bastard life-forms that kept sane men on Earth. But he'd never lost a man, not for keeps, and the thought of Balls' ugly, puffy face missing from the mess table tightened his throat.

Unconsciously counting the 12-inch steps as he went down, Slapper slowed on number sixteen—and luckily so. His next groping step kicked the missing crewman full in the face. A grunt, then a feeble little cry emitted from Balls' lungs. He was huddled at the base of the ladder, a small battery-light dangling from his right wrist by a short cord. Tied to his left was the little prospector's pick that was a pro's standard reconnoitering tool.

"The line! Where's that line?" Slapper demanded, and before he could yell again a quarter-inch rope sawed across his cheek. He whipped it around Balls' shoulders and under his arms, knotted it and ordered, "You got a load."

He scampered up the lad-

der ahead of the dangling body and found Sniffer casually winding in the portable winch he had taken time to rig.

Slapper back-handed him aside. "Don't strain yourself," he said and hauled the line in hand-over-hand—220 pounds of dead weight, minus gravity differences—on a coarse rope that cut even through his gloves.

A moment later a tangled ball of arms and legs wrapped around the leather-clad form of Balls Murphy rolled onto the mining-gear deck.

"Butch, get the medic kit," Slapper said. "Pokey, you and Sniffer bear a hand here. Help me straighten him out. He's wound up like a tangleweed."

Sniffer stepped on the Irishman's ankles while the other two men peeled his arms loose and gently straightened him out. A leg got away from Sniffer, and instantly Balls drew it up, doubled against his belly.

"Cramps?" Pokey asked.

Slapper shook his head as he peered into Balls' pinched white face and narrowed eyes. He stripped off the leathers and probed Murphy's body for abrasions. There were none. Breathing was shallow and quick and pulse even faster. "Better bed him down in the mess room. Might fall out of his hammock," he said. They wrapped him in a blanket and tried to lay him out straight, but as soon as they let go of him he rolled into a tight huddle, head down, arms crossed to his chest and legs drawn up tightly to his belly.

They tried to feed him coffee, but he spit it out of slack lips, bubbling and slobbering. They went over him again, inch by inch, but not the tiniest perforation of his clammy skin were they able to find.

Slapper opened the medic kit and treated him for shock. Gradually his color improved, but his pulse and breathing remained quick, much too quick. Slapper loaded a hypo and stabbed him with a buckshot dose of anti-infection serum. Balls winced and screamed like a baby. Sniffer curled his lip. "Well, did we sting his little bottom?"

Slapper scowled. "Shut up! This is more serious than it looks. I saw a case about fourteen years ago on Acey IV. The guys didn't take it serious, and the poor fool died. Never did find out what killed him, but the Earth docs said that from the description something scared him into—

what did they call it?—infantile regression."

Slapper stood up and shook his head. "Look at that position. The foetal position, they call it. Like a new-born baby. And for all practical purposes that's the way we got to treat him until he snaps out of it, do you get me?" He glowered at the others.

Only Conkie showed any sign of sympathy, but then Conkie was the only one of the four who hadn't lost his share of the cargo profit to Balls in the crap game.

Slapper took this into account. "We all take turns at tending Balls," he announced, "but you take the first day or two, Conkie. Give you a chance to get your strength back, too."

Butch, Pokey, and Sniffer spat on the deck as one man. Sniffer said, "He kin suck his thumb off up to the elbow as far's I'm concerned. Hope he chokes."

The other two recalcitrants said nothing, but Slapper could see they felt the crew as a whole had executed its full responsibility by hauling Balls out of the grass. If he wanted to huddle on his back and play infant while they sweated out the *kegnite* which they already owed to him, that was his business, but they were damned if they'd play nursemaid in the bargain.

They cropped a small pile of the tubular grass and put a torch to it to make sure it wasn't too highly inflammable in the high-oxygen-content atmosphere. The greenery shrivelled up and charred easily, but it didn't sustain a flame.

Sniffer broke out the thermite bombs, which they ignited and tossed out the port. No one had an ache to descend into that rustling forest and probe the mystery of Balls' experience.

Thermite burns hot and unquenchably. They peppered the 30-foot circle of the yellow marker-stain with the little bombs and stood back to watch the results. The grass writhed, charred and went up in quick smoke followed by billows of hissing, stinking, yellow steam.

At the first whiff Sniffer turned pale and ran for the head. Before long the others gave in and slammed the port shut until the cookery was over. The smell that assailed them was sweetly, nauseatingly reminiscent of burnt animal flesh—charring blood and living tissue.

Two nine-hour rotations of

the little planet were completed before the stench subsided enough for the men to venture out. At their feet was a blackened pit, some 20 feet deep at the edges where the grasses were burned back a few feet. The floor of the pit sloped in unevenly, each bomb having burned a yard wide crater of its own about two feet deeper. It was an unsightly, black wallow.

Pokey went down the ladder first, hacking a path the four feet out to the charred area with his knife. Then, cautiously, he bent to examine the terrain where it sloped up from dead to living. Slapper watched him raise his machete and chop down into the pink, rubbery surface. The knife slashed deep and a spurt of thin, red liquid splashed out and drenched his leg leathers. He swore and stepped back as the blood-red juice continued to gush inches into the air from the wound. The liquid came in surges, strong at first, then slowly weakening as the red stuff darkened and coagulated at the ends of the gash.

The men watched silently while Pokey satisfied himself as to the nature of the thing. The beefy little runt grasped a strand of grass and heaved on it until it came out by its single, stringy root—like a whisker plucked from the chin of a giant. No "blood" filled the follicle-like hole, but a thin serum rose slowly, and Pokey took samples.

Butch was standing guard with both pistols out. Conkie had left Balls to his own cooing and gurgling and was peering sharply at the rim of the pit, watching and listening for the slightest motion or sound that could mean sudden death on a strange planet.

Nothing happened. An hour later Pokey came out of the lab and voiced his opinion. "It's a new one, but then ain't they all?" He shrugged.

"Animal or vegetable?" Slapper asked.

"Both." Conkie's reply surprised no one. "It's a single big hunk of life, spread out in all directions it looks like. Breathes air through the stems and supports animal tissue with a pretty efficient blood system, haemoglobin and all. A lot thinner than human blood, but damned if there aren't corpuscles, platelets and all! What's more, it's warm-blooded."

"What's it eat?" Sniffer wanted to know.

"Air, sunshine and minerals. I pried under it, and

there's a hundred little filaments digging deep into the soil under every tube of grass. The transfer from chlorophyll to blood system happens right at the follicle. Must be hearts or pumps of some kind spaced around every so often. Pulse runs about 45 beats a minute. Temperature 68.3 F. Course it mighta been running a fever around that gash I cut."

"Anything dangerous about it?" Slapper asked.

"Nothing I could see. I think it has a nervous system. There's little white fibers running along under the surface. Might be a center of intelligence somewhere, but I couldn't see any specialized organs. Nope. Looks about as dangerous as a scalp of hair without a head under it. About a two-foot thick scalp."

Slapper frowned. "Nothing to explain what scared the bejeezis out of Balls, eh?"

Pokey shook his head. "Not unless the goldbrick has been hidin' a case of claustrophobia from us all this time. That grass would be mighty thick closing in over a man's head."

Slapper gave it up, issued the necessary orders and the crew fell to with the drills and explosives. The pocket of *kegnite,* typically, was near the surface, and little stripping was necessary to reach the crumbly ore. Their location was somewhat north of the equator, and it was the summer season, so fitting their labors to the hours of daylight, they worked five hours and rested four. Their labors, thus, averaged almost 14 hours per terrestrial *day.*

On the second day the yellow sun, Alpha Centauri, broke through the clouds and burned off the protecting vapors. Slapper rigged a canopy, but the work became almost unbearable as the temperature mounted over a hundred and ten. Suddenly the men became solicitous about Balls Murphy's welfare and began hinting that they would like to relieve Conkie at his baby-sitting duty.

Slapper grinned and arranged a schedule. With Balls out of action the crew was 17 percent short-handed, and as Slapper had predicted, it took another man constantly attending him to keep him from smothering in his blankets or otherwise injuring himself. Balls had the mental outlook and reflexes of a week-old baby, but his muscles were quite a problem. They fed him out of a narrow-necked plastic bottle, and if his gruel

wasn't on hand when he was hungry he screamed and kicked and tore at his itching face with murderous fingernails.

So, reluctantly, Slapper assigned another sixth of his manpower to stand watch, day and night over Balls. The work seemed to progress even more slowly than the shorthandedness would justify. At the end of the tenth shift Slapper checked the ship's hold, capacity two hundred tons. He estimated less than ten tons of ore had been mined and loaded.

He returned to the mess ward where his crew was chewing on their evening ration of protein cakes and swilling huge cups of reconstituted powdered milk. Balls Murphy was propped up in a corner, naked except for an over-size diaper with ravelled edges where it had been torn from a bedsheet. He was studying his toes, his head wobbling loosely and his mouth open.

Slapper looked down the table. "You guys must like it out here."

"Sure. It's lovely," Butch said sarcastically. "What's the gripe?"

Slapper drew a cup of milk from the mixing valve and spraddled a chair. "At the rate we're going we'll be two and a half months loading the cargo."

Sniffer glared over his shoulder at Balls, who was trying to focus his wide eyes on the conversation. "Thanks to him!" Sniffer grunted.

"Partly," Slapper granted. "But partly thanks to your thick-headed gambling." He pointed at Sniffer, Pokey, and Butch. "You three guys have been runnin' a contest to see who could load the least ore in a shift. Now get this. We stay here until that hold is fulla *kegnite* if it takes a year."

Pokey grinned back at him defiantly. He took a little notebook from his pocket and studied the figures. "I checked the food inventory yesterday. According to my figures we push off in just nineteen days, terrestrial. You might starve us, Slapper, but the pilot and mate ain't goin' to stand still for it."

Slapper sloshed the tepid milk around in his mouth thoughtfully. "So we run out of food. So we forage." Even as he said it he knew he was bluffing.

"Forage? You mean we got to start eating Hairy Joe?" Pokey had long held to the theory that the bastard, vege-

table-animal organism that matted the landscape was the sole life-form on A. C. VII, and Slapper was forced to agree that it seemed reasonable.

Eating any alien foodstuff was a hazardous experience and normally a desperate act of last resort, but Slapper set his jaw. "Pokey, as of now you're a foraging party of one. You said yourself that Hairy Joe's flesh looked a lot like Earth meat under the microscope. I want you to slice off a few steaks and see how they cook up."

"And if it don't eat good?"

"Then we raise ship, soon as the skipper gets the drive fixed—and we scout around. We don't *know* that there isn't other life on Acey Seven."

Not even Conkie liked the plan. The four men stared down the table at him, and Butch finally got to his feet. He hooked a thumb in each holster, his dark, intense face pale around the eyes. His mouth formed a wicked little oval, lips drawn so tight they were rimmed with white.

"Slapper," he began in a husky voice, "you been doin' the thinkin' for this outfit too long. I've taken your orders and I've taken your cuffing around but nobody's going to stuff Hairy Joe meat nor any other stinkin' extra-T filth down my neck."

Slapper began to get to his feet, and Butch screamed, "Siddown! I ain't through!" The foreman moved slowly and deliberately around the table toward the gunman. Butch waited, his mouth pinched in like a man without teeth. He waited until Slapper was almost within reach, then the slender wrists rotated in one leather-slapping blur, and each hand came up levelling a pistol at Slapper's belly.

Slapper stopped. It was the first time Butch had ever made a fast draw without firing, and it was close. Too close. His eyes were insane little agates. He seemed to be controlling his trigger fingers with a great effort.

"I'll tell you what I want you to do," Butch said in a cracked voice. "I want you to go over in the corner with Balls Murphy and play patty-cake. That's right, you heard me. Patty-cake."

Slapper relaxed his shoulders. He had supposed some day it would come to a showdown with Butch. The rest of them he could handle, but Butch wore guns. He was the gunney for the whole crew, and he wouldn't take off the

weapons even to sleep. Never before, however, had Butch touched his weapons in a crew dispute. It was an unthinkable, cowardly gesture among pros to threaten a man with anything but your bare hands.

Butch was no coward. That Slapper knew. But every man has his breaking point, and Butch's was his semi-hysterical hatred of alien life-forms. That's why they called him "The Butcher." That's why they trusted his flaming weapons to protect them on planets with vicious animals, reptiles, birds and even plant life. Every member of the crew owed his life ten times over to the speed and accuracy of Butch Bagley's marksmanship.

It wasn't too amazing, then, that Slapper's insistence on sampling Hairy Joe as a ration-extender should stir a revulsion and maniacal revolt in the lean, neurotic killer.

Slapper looked down at the small, lethal weapons, the tense fingers curved on the triggers. It was not the first time his authority had been challenged, but it was the first time his very life hung precariously in the balance.

To back down before his crew was a bitter loss of face that would ultimately cost him an acre of skin from his knuckles. Yet, adaptability to a situation was the first law of survival. Pros who debate such matters at excessive length die young. Slapper had already survived 19 years among the planets, so his decision came somewhat more quickly, if not more easily, than it would from a younger, less case-hardened pro.

"Yeah, sure, Butch. I think that would be nice," Slapper agreed in a flat voice. He moved over to Balls' corner and squatted before the huge, diapered Irishman.

Slapper reached for one of the limp hands. Balls grabbed Slapper's great thumb and tried to put it in his mouth. "Come on, boy, Butch wants us to play a game," Slapper insisted, bringing Balls' two hands up in clapping position. "Here we go. 'Patty-cake, patty-cake, baker's man'——"

Behind him Butch laughed derisively and addressed the other four men at the table. "Ya see? He's not such a big man after all. We don't have to hang around Acey Seven and starve, and we don't have to eat no rotten Hairy Joe, neither."

There was silence, then

Conkie spoke. "Put up the guns, Butch. We're with you."

"I won't. Not until we get this settled. I'm done taking orders from a crazy foreman with ideas like eatin' steaks off of Hairy Joe."

There was another silence, then Pokey asked softly, "You got any suggestions who ought to be foreman, Butch?"

Slapper smiled to himself. "'—mark it with T, and put in the oven for——'" he continued. He knew what was in their minds. Every pro crew in the system had a foreman, one strong man whose main job was to keep the men from tearing at each others' throats. He held the job because he was big enough and tough enough and made more right decisions than wrong ones.

The embarrassing question Pokey had posed was, who was big enough to take and *hold* the job from Slapper? The tone in Conkie's and Pokey's voices had been plain. They weren't taking orders at gun's point, not for future execution.

"Don't get me wrong," Butch said, somewhat subdued. "I ain't striking for the job."

"'—baker's man. Bake a cake, fast as you can——'" Slapper's voice rose in volume and dominated the silence. He turned to the conference. "Gentlemen, may I make a suggestion? Just as a member of the crew, of course."

No one answered, so the big red-head continued. "Now that the mutiny is over, we got a problem. Who's the new leader? Since none of you seems anxious to take over the job, and since you all seem to sanction firing me—at gun's point—then it looks like there is only one other candidate we can vote for."

He let the remark hang in the air. Finally Butch grunted, "All right, who? The pilot? You know damn well he won't fraternize with a pro crew."

"No, not the pilot nor the mate. I nominate my friend, here, Balls Murphy."

Sniffer snorted through his big nose. "You nuts?"

"Not at all," Slapper replied calmly. "You seem to want a foreman you can push around. Balls is your man. If he gets mean just cut off his bottle."

"Wait a minute," Conkie said, getting the idea. "I think I see what Slapper means. Since Balls won't be issuing any orders for awhile that leaves five of us to take a vote

on decisions. An odd number so there won't be any ties."

"No dice," Butch snarled. "Slapper's goin' to the brig. That's my vote. If we leave him loose, no matter who we elect he's got control again with them big mitts of his."

Slapper fixed the gunman with a cold stare. "Anything to welch on a gambling loss, eh, Butch? If you lock me up and take off when we run out of rations you will have a light load. Of course, it's no hide off of you, since you owe your share to poor Balls, here."

The taunt struck home. Pros were gambling men. Back on Earth they lived to eat, drink and gamble between trips. But mostly to gamble. And to a gambling man a gambling debt is a debt of honor. Butch's face showed his indecision. If it got around that he had chiselled out on Balls Murphy, he'd have no face among pros anywhere—and the ones who counted most with him were the men at the table before him, ready to turn on the silent treatment.

"Will you promise to keep your damned hams off of us if we turn you loose?" Butch demanded.

Slapper nodded. "On one condition—that you keep on being nice to Balls. Lay a finger on him and all bets are off."

Butch's face relaxed into a smirk. It was an easy, face-saving solution. "Why, we just elected Balls foreman. Nobody's going to hurt our sweet little foreman, are they, men?"

And so ended the Patty-Cake Mutiny, no blood, no sweat and only a few tears—from Balls Murphy who screamed for his bottle and needed changing.

Two hours later Slapper Kansas slipped out of his hammock, moved quietly to the mess room where Balls was bedded down and closed the door tightly. He awakened the infantile Irishman and gave him a bottle of milk. Balls swallowed it gratefully and cooed at him.

"Balls, my friend, you and I are going to play some more patty-cake. And maybe some peas-porridge-hot."

He grasped the heavy wrists and began clapping them together murmuring the nursery rhyme softly. The big blank eyes seemed to focus on him, and for the second time this evening Slapper saw faint, troubled recognition in them.

Somehow, ore production

increased on the next shift. Pokey, Sniffer, and even Butch, still smarted under the flat accusation that their dogging it was a form of welching on their gambling debt to Balls Murphy. Slapper watched them at the drills, explosives and sorting screens, watched them bend to their scoops. Out of the corner of his eye he noticed the improved sag on the portable conveyor.

Slapper Kansas was not entirely dissatisfied with the results of the mutiny.

At the end of the fifth hour he knocked off, but the others, perversely, continued working until it was pitch black. Slapper ignored them, climbed into the ship and equipped himself with a long, sharp knife. Back at the edge of the pit again, he slashed twice vertically, into the meaty growth that surrounded them. Then one heavy, horizontal cut and he began trimming away skin and the bottom tendrils. When he was through he was well-covered with thin blood, but a great steak lay on the flat of his blade.

He left the others to their overtime work and sought out the galley.

Little cookery was undertaken on these trips. All food was concentrated and precooked, but the company provided a hi-freak broiler in case anyone insisted on a hot meal.

Slapper washed off the blood, salted the meat thoroughly, crammed it into the tray and closed the broiler door on it. To be safe he gave it a full 30 seconds. The timer clicked, and cautiously he tilted the door open with a frankly puckered look around his freckled nose.

The aroma was a shock, an olfactory delight so sharp it was almost painful. He withdrew the sizzling meat and dropped it on the middle of the mess-room table without benefit of platter.

Ask any pro about the quality of the food he has to eat. He'll likely answer, "Well, it ain't bad, and it ain't good. It just ain't." Never since the armies of the 20th Century began tricking out K-rations and other concentrated packets for men in the field, had anyone succeeded in devising a truly delicious diet that featured high nutrition and compact bulk. Earth's corporations who financed these trips did their best with the advanced methods of preservation, but before a pro landed at his destination he was always yearning for fresh food,

mainly fresh, juicy, dripping *meat*.

The slab of meat before Slapper looked like a Porterhouse; it was more tender and fine-grained than a filet mignon, and it smelled like heaven. The cautious little scrap that the ex-foreman sampled brought a rush of saliva to his jaws. He chewed slowly, thoughtfully, fighting the desire to gnaw off a real chunk.

Here goes, he thought, letting the juice slip down to his eager stomach, but his doubts were fast vanishing. Nothing that delicious could possibly be poisonous.

When there was no immediate reaction from his gastric equipment other than an impatient belch, Slapper threw caution to the winds.

Ten minutes later the four sweating crewmen followed their noses to the mess-room and stared at the ragged remains of a two-pound steak. They sniffed the smoky tang from the cooling broiler and noted the juice-slobbered table. Slapper cleaned up the mess silently and went over to play with Balls Murphy. The others drew their rations from the dispenser and ate, likewise in silence.

At dusk, eight hours later, Slapper cut three steaks, cooked them and presented himself at the skipper's wardroom with a steaming platter. The usually faultlessly uniformed officer was naked to the waist and unshaven. "What do *you* want?" he demanded.

Then his eyes and nose discovered the steaks. Slapper handed them over. "Compliments of the crew, sir," he said politely. "We've tested them—local fauna—delicious. No ill effects. If your rations are as low as ours you'll probably want to stretch them. It seems we'll be quite awhile finishing with the mining operation."

"Well, thanks, Kansas. Smells edible. We've got our troubles, too. Davis and I are up to our ears in the main mags. Have to rewind three fields by hand, splicing every damned turn. I was getting a little concerned about the food, myself. Can you supply us with plenty of this meat?"

"All you can eat, sir. I'll tend to it myself."

It was the longest and most cordial conversation on record between a pro and a ship's officer.

When Slapper returned to the galley it was well smoked up. Butch was the only holdout. He chewed on cold ra-

tions while the others ate Hairy Joe steaks. Slapper sat down and consumed his own with gusto. Halfway through he had a thought. He sliced a chunk off and went over to Balls.

"Open up, fellow. Let's see if you've learned to chew yet." Balls let him stuff the morsel between his teeth, sucked at it for a moment then began chewing slowly, letting the rich juice stream from the corners of his mouth. He made a ludicrous sight, hunched in the corner, naked, diapered, a touch of silver in his short, black hair. But Slapper didn't laugh. The man needed the best psychiatry on Earth to snap him out of this regression.

Or did he? Slapper caught that glimmer of intelligence again. He squatted down and began playing peas-porridge-hot with the knobby-faced pro. Haltingly, Balls was learning to slap his beefy thighs with both hands, then raise them palms out and meet Slapper's huge paws. Each time he succeeded a big grin spread over his ugly face, fading into puzzlement.

Slapper occupied himself for a few minutes, turned in with the rest and simulated sleep. When the others were snoring he returned to Balls and continued the coaching process behind closed doors.

Having satisfied themselves that Hairy Joe constituted nothing of a hazard, the crew —with Slapper abstaining— voted to knock off the baby-sitting watch. At night Balls slept peacefully in the corner of the mess-room. During the day they lowered him to the pit and parked him on a cleared area of Hairy Joe's warm, pulsating skin where he watched with big-eyed interest the mining operations. This freed the baby-sitter, and the crew was back to 5/6ths full strength.

Slapper worked hard in the pit. Increasing his tempo of digging slowly he raised the output of the four others. No longer under his domination, nevertheless they disliked being outworked. The conveyor belt sagged and screeched more and more, and the ship's hold filled more rapidly.

It took the skipper and mate three Earth-weeks to complete the repair. Slapper talked it over with the officers, and they agreed that with the extra meat supplement they could stretch their rations some time yet.

Slapper reported the conversation back to his crew-

mates. "So there you are," he concluded. "They are willing to stay on and shoot for a full cargo if we are."

"Count me in," Conkie said at once.

"Sure, sure," Sniffer said. "You got your full share coming. I vote we drag our tails offa this hot box as of now. It ain't our fault we've been short-handed."

Pokey dropped his D-handled ore-scoop. "Me, too. I can just taste that beer runnin' down my throat."

Butch laughed in Slapper's face. "How you votin', Kansas? Guess how, boys! Only it won't do you no good. It's three against two. We really been puttin' out the work, and like Sniffer said, it ain't our fault that baby brown-eyes over there went and—" His face went blank. "Balls! Where is he?"

Slapper wheeled and stared at the spot where they had left their infantized crewmate. He was gone. The grass stalks were bent slightly to indicate where he had entered the weird, miniature forest, but they could make out no sound or sight of him.

Slapper caught up one of the great knives they had brought down to cut their steaks and began hacking the grass aside. Conkie Morton, also knife in hand, worked at his side. Together they hacked a four-foot swath.

"Higher," Slapper yelled once. "You want to cut his ball-bearing head off?"

Less than twenty feet from the pit they found Balls on hands and knees talking baby-talk to himself and staring down at a small mound in the throbbing flesh of Hairy Joe. Obviously he was all right, and Conkie immediately lost interest. But his curiosity got him down to examine the little hump.

It pulsated strongly with a faintly audible ke-thump! ka-thump!

"Hey, Slapper!" he said. "Here's one of the hearts. You know, like Pokey figured. There'd have to be a lot of independent hearts spaced around to keep up the blood pressure."

Slapper, who was herding Balls back through the slot in the grass turned and examined the calculating expression on Conkie's slender face.

"What's on your mind, lad?"

"Look, Slapper. Suppose we cut about a ten-foot circle around this heart, pry the whole slab loose and plant it aboard the *Discus?* Suppose it just happens to live until we

get back. And suppose it takes root all right back on Earth."

"It'd probably bleed to death," Slapper objected.

"Maybe, and then again maybe not."

"It needs a lot of dirt to grow in."

"The hold is still about a third empty, and we're outvoted on staying to fill it up. Lets spread soil on top of the ore and plant Hairy Joe in his own soil. Then the experts on Earth can analyze the dirt and make sure Joe's planted in what he likes back there."

"What about light? The thing would probably die in the dark hold."

Conkie ran out of patience. "Hell, maybe a lot of things, but think what we'd have if we got it back intact and it grew on Earth like it does here!"

"Maybe," said Slapper half to himself, "maybe I'm just jealous because I didn't think of it myself. Come on, let's see what the others say."

Together they towed Balls back to the pit and unfolded their plan. Even Butch's eyes lighted up a little. As much as he hated alien life-forms, the thought of making the trip pay off after all was thoroughly attractive.

Pro crews came in for a full share of anything of value they brought back. Pokey said, "We'll hold out for a royalty arrangement. If they make the brute produce it'll run the live-stock people out of business. Imagine, tenderloin steaks two feet thick, growing right out of the soil! No feed, no fences, no jeep-boys to round them up. And what a yield per acre!"

It was a messy, strenuous project. As Slapper had predicted, Hairy Joe bled copiously when cut. They reduced the mess somewhat by slicing carefully and tieing off the larger blood-vessels.

Even so they were wading in the thin blood before the circular incision was completed. Then there was the logistics of the matter. Their collective enthusiasm increased their fear of failure as well, and they decided not to risk damaging the thousands of delicate roots. Instead they dug deeply around and under their precious, bleeding slab and undertook to transport two feet of dirt along with it.

The whole mass came to some two tons, and they had to ring a platform sling, which they fabricated from a metal bulkhead torched out of the ship's interior.

It took four shifts to complete the job—some twenty

hours during which another hundred thousand credits worth of *kegnite* might have been mined and loaded. But no one, not even Slapper, mentioned this.

The ex-foreman gave the signal to take off, and the *Discus* lifted clear of Acey VII bearing aloft with it a still bleeding, faintly-pulsing segment of the largest single life-form ever discovered by Earthmen.

When the excitement quieted, Butch Bagley and Sniffer Smith convulsed into a fit of vomiting. The continuous smell of blood did it for Sniffer, and Butch's subconscious revulsion with the whole idea finally gained the upper hand. Conkie Morton, of course, passed out under the initial acceleration and didn't recover until they were clear of the system and moving into inertia-less drive under the repaired mags.

So it was that Slapper had almost ten days of uninterrupted opportunity to work on the rehabilitation of Balls Murphy. Balls' mental redevelopment was at a much advanced degree over the chronological passage of time since his retrogression. Instead of a bubbling babe of one month he was already a toddler beginning to repeat a few words after Slapper.

The first thing Conkie did when he climbed out of his sick-hammock was to look in on Hairy Joe. The plant-animal was not exactly thriving. The grassy stalks were drooping over almost double and the pulse was weak.

When Butch and Sniffer recovered and learned the critical condition of their precious cargo, they insisted that lights and heaters be run into the unheated hold. Pokey helped and added a pair of fans to circulate the air gently.

When all was done that they could think of they retired to the mess-room to argue and bicker over the division of the spoils.

Slapper stayed out of the wrangle at first. He and Conkie were in the minority on all issues, it seemed, so he hunkered in his corner with Balls behind an improvised play-pen of chairs.

Butch was enumerating the obvious reasons why Balls should not be cut in on the proceeds, if any, from Hairy Joe. These included Balls' incapacitation for the whole working period which ran them short-handed and made them return with less than a full cargo of *kegnite*.

Conkie rebutted, "It wasn't Balls' fault he got put out of it. I'm for cutting him in for a full share."

Pokey said, "He's got four shares of the *kegnite* now. What more you gonna give him?"

"And we dug it without his help," Sniffer agreed. "First he wins it from us, then we dig it for him. Hell with him! I'm for dealing Balls out on Hairy Joe."

Butch, strangely enough, was feeling slightly more charitable. "Oh, let's cut him in for a sixth of one share and split the rest of his share among us. After all, if he hadn't wandered off in the grass Conkie wouldn't have found the heart and got the idea. How about it Slapper?"

As a conciliatory move it was far beneath Slapper's dignity to answer. He simply grunted and continued speaking monosyllables to Balls.

Butch felt very piqued. "What're ya trying to do with Balls, anyhow? Trying to beat some psycho-quack out of a job? You'd think he was a godhead the way you—"

"God's Head!" Balls' normal, deep voice boomed out. "God's Head!" he repeated with a rising note of panic. He struggled to his feet and swayed pressing his fists to his eyes.

Slapper moved fast to the water dispenser, kicking chairs aside and snatching a cup. He filled it and dashed its contents into Balls' face then caught the big man as he stumbled forward.

When he opened his eyes he stared about him, down at the crude diaper knotted below his bare belly, around at the chairs hemming him in, at the strained, individual faces of his crewmates and finally down at the diaper again.

"What," he said slowly, "in the goddamhell have you been doin' to me?"

He shook off Slapper's supporting hand and glared about. "Well, speak up, you crummy slobs! What kind of a thing is this to—to——" He backed against the bulkhead and covered his eyes again.

Slapper gripped him by the shoulder. "Hang on, Balls! Don't let go again. For over a month I been trying to get you to tell us what happened down there. Down in the deep grass, remember?"

He led Balls to the table and got him into a chair. "Mix him some coffee, will you Conkie?"

Conkie made it double strong, and Balls let it scorch his throat until tears came to

his eyes. He shook his head. "Got a feeling I been away for a while. Away—away, way back."

Slapper leaned forward. "You got a shock, Balls, and we still can't figure out what it was that—that, well, sort of knocked you off your rocker."

Conkie said, "What happened when you went down the ladder into the deep grass?"

"Deep grass!" Balls dropped his head onto his arms and shivered for several minutes.

"Was it claustrophobia?" Slapper asked at last, fearing the Irishman was slipping back into retrogression. "Here, drink some more coffee, man."

Balls raised his head weakly. His face was drawn. "Perhaps it was," he said. "Just a little bit. But that wasn't the whole of it. I remember the whole crazy thing now. I was climbing down the ladder thinkin' about the crooked dice, and——"

Butch came out of his seat. "What do you mean, crooked dice? I got them right here." He fished two wooden cubes from his pocket. "I rolled 'em two thousand times afterwards, trying to figure them crooked."

"No, not them. The other ones. I made two pair. Pałmed the others and hid 'em," Balls said slowly. "It was just a gag. I was going to——"

The blood surged into Butch's face and he lashed a fist across the table. It caught Balls high on the cheek and snapped his head back.

The action caught Slapper entirely by surprise, but his reflexes were equal to the occasion. His left hand cut a short, open-fingered arc and smashed Butch back against the bulkhead with stunning force. The gunman's hands went feebly to his hips, but his legs folded under him and he sank to the deck.

Pokey snarled deep in his throat. "You had no call to do that, Slapper. You heard Balls admit——"

Slapper aimed one at Pokey who ducked. It caught Conkie a glancing blow and brought him up inflamed. "You promised to keep your damned mitts to yourself."

"On the condition that no one touched Balls——"

Sniffer had launched himself at the newly, self-appointed foreman from behind.

Balls, himself, was confused. He had taken his share of cuffing from the red-head-

ed foreman, and just recently he remembered a cup of water full in his face. Lowering his head he went to work on Slapper's belly with the second largest pair of fists aboard the *Discus*.

It was entirely to Slapper's liking. The blows he took were heavy. Many of them had several years' pent-up grievances behind them. They hit him from both sides, the back and the front. His light, in-transit jumper tore to shreds under the clutching, battering, horny callouses of ten flailing fists.

Given enough time, Slapper knew, they could cut him down through sheer loss of blood, so he gauged his defense carefully. With both elbows high he protected his face and both sides of his jaw with his open hands. They hacked murderously at his body, but he managed finally to swing loose and single out Butch, who was weakest of the lot by virtue of the first tremendous slap he had absorbed.

Slapper rushed him like a bull and felled him with one blow. This time Butch stayed down. Whirling, Slapper felt one of his pile-driving elbows dispose of another opponent.

The rest was easy. First he flipped thick, squatty, little Pokey off his feet with an open uppercut to the chin. A quick chop to the neck with the rock-edge of his right hand floored Sniffer.

Balls Murphy was, at this point, attempting a bull-rush of his own, head down and feet churning, but his diaper slipped to his knees and tripped him. Slapper kicked him casually along the side of the head as he went down, and peace reigned in the pro's mess of the *Discus*. Slapper Kansas was once more foreman.

The remainder of the trip was notable only for the telling and retelling of Balls' experience. "Like I said," he explained, "I never talked much about it, but my Irish mother was pretty religious. She used to rock me to sleep sayin' over and over agin, 'Yer safe as on God's Head, me lad. Just be a good boy, and you'll always be safe as on God's Head.'

"Well, here I was standin' on this palpitatin' mess of meat balls you guys call Hairy Joe, and I look around me at all this hairy lookin' hair, and this old sayin' of my mother comes back to me about bein' good and I'd wind up safe on God's Head. Now, I'll admit it, I was feelin' a little guilty of

takin' you boys with the loaded dice—even, mind you, even with full intentions of not collectin'—perish the thought! But anyhow, I ain't led an exactly immaculate life, and here I was down in this spooky, hairy stuff, all by my lonesome.

"I keep tellin' myself to quit bein' silly. It was just a bunch of grass. So I turn on my light, grab ahold of a stem and jerk. And out it comes like a hair by the roots. I turn my flashlight down on the hole, and so help me, the hole it comes out of looks nothin' else but like a flea's-eye-view of God's Head. There's the pore it come from, and there's a mess of palpitatin', pink scalp!

"I say to myself, Murphy, don't be a damn fool. Not even God's got a head this big. And to prove it I swing my little pick into Hairy Joe, and damned if God don't start bleedin' all over me. I like to passed out!

"I look up, and it's dark and crowded with hair, and I get the awful feelin' that God's about to raise His right hand and smack me like a mosquito that's bit Him. That's when I guess I flash back to my mother's arms, and—well, you know the rest."

Slapper made his regular, verbal report to J. Killsworth Farnum, the corporation representative, when they got back. Farnum had word of the strange cargo in advance of Slapper's visit. For the first time in their long but formal acquaintance, the executive arose to shake hands with the foreman.

"You've created quite a sensation with that overgrown tenderloin you brought back. Our lab reports it's recovering very well. If it lives up to our expectations your crew's share of the royalties will be considerable."

"Yeah," Slapper acknowledged. "I hear there's quite a panic around the Chicago stockyards."

"You have no idea the stir it's making," Farnum said pleasantly. "How was the voyage? Any trouble with your crew?"

"Nah. Nothing unusual. A little quibble about splittin' the shares, but we got that straightened out. Matter of fact, only had one mutiny the whole trip, and that didn't amount to a damn."

THE END

"LABYRINTH"

NEIL R. JONES

Illustrated by LEO MOREY

Some of the most enduring SF stories ever writeen were those done for Neil Jones' "Professor Jameson" series. So here, forthwith, is another of these timeless masterpieces about the immortal machine-men of Zor—a story in which the intrepid Professor and his indestructable companions prove to be not quite as durable as they seem!

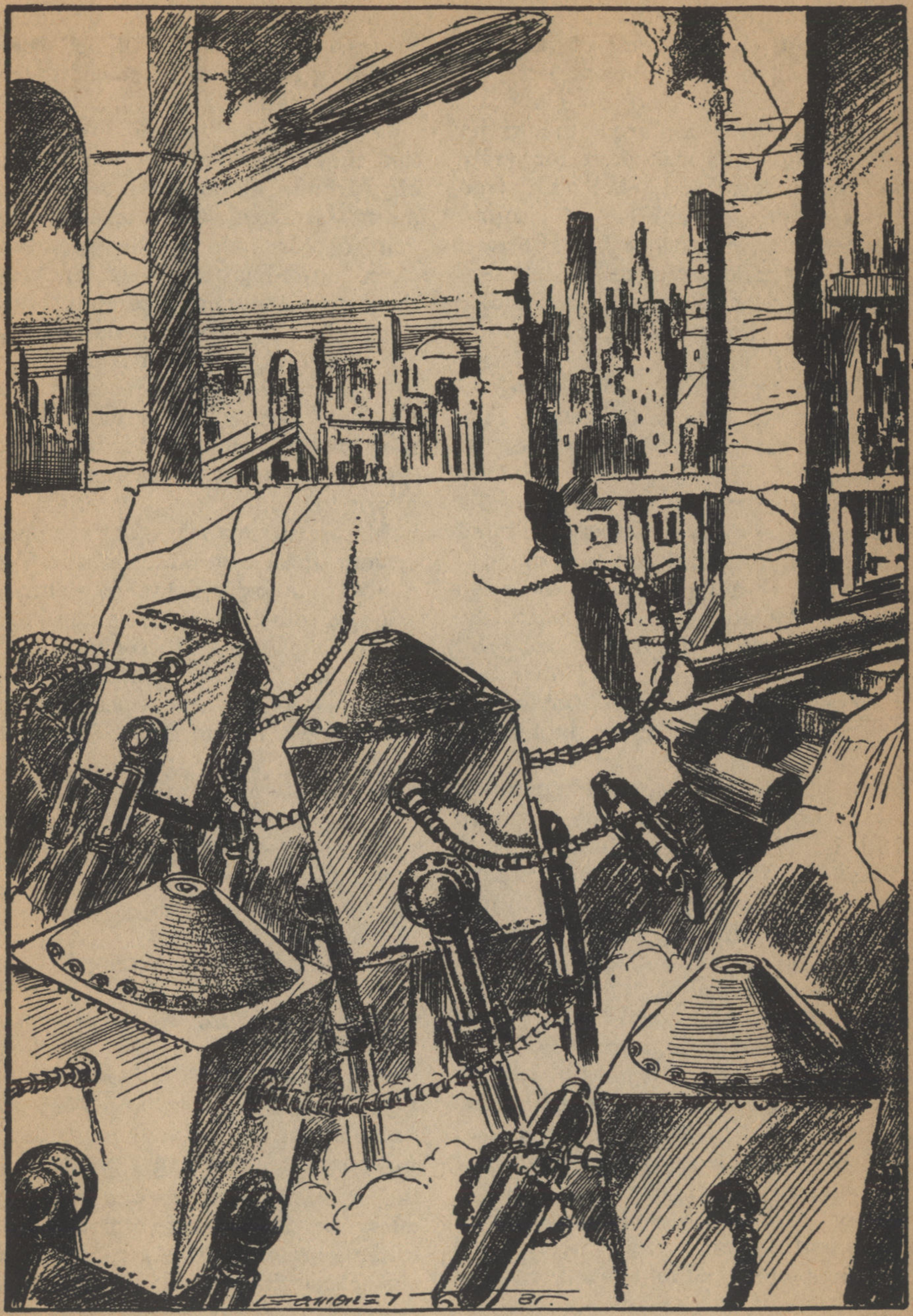
Prologue

DREAMS of the Egyptian Pharaohs and those of Professor Jameson were all practically identical. The divergence from similarity, however, existed more or less in realization. Both sought after immortality of the material body subsequent to the time animation had ceased, an unending physical likeness. The Pharaohs' achievements ran into several thousands of years, the efforts of Professor Jameson running through centuries into many millions of years. Also, the professor's results bordered on perfection of the highest anticipation, much in contrast to the chemical-soaked, scarcely recognizable features of the Egyptian mummies.

But then, the Pharaohs knew nothing of space-rockets. What little science existed in their days ran closer to chemistry. Had there been such contrivancess of mechanical design like the professor's space-rocket in that day and age, it is doubtless that Amenhotep, Rameses, Tutankhamen and their contemporaries would have been dissatisfied with the simple design employed by the professor. Their superior magnificence and regal eminence would have demanded nothing less than ornate funeral rockets of chased gold.

Professor Jameson died in 1950. His rocket lay waiting for him, and, carrying out the terms of his will, his nephew, Douglas Jameson, placed the professor's dead body in the rocket and released the lever operating the radium propulsion. Like a silent meteor, the bullet-shaped projectile sped rapidly off the face of the earth through a hemisphere of darkness into the perpetually sun-lit night of the dark, yet glittering cosmos, stabilizer fins guiding it safely to the surface of the atmospheric ocean where its speed became multiplied. Curving into the earth's gravitational field, the rocket, as foreplanned by the professor, became virtually another

Copyright 1936 by TECK PUB. Inc.



"LABYRINTH"

moon, a tiny satellite. From this point on, the problem of physical preservation became simplified.

No need was there for elaborate and intricately-prepared embalming fluids; no need was there for wrappings, or secret tunnels leading into man-made pyramids of squat, gargantuan proportions, death-traps on every hand and of all conceptions to thwart and wreak vengeance upon the marauding looter. Automatic repulsion rays, excited through proximity, produced a counter attraction to swerve the rocket aside from dangerous meteors.

In the depths of space, the professor's dead body encountered no decay, no disintegration, no change whatever in its cold, frozen state. For forty million years, the rocket satellite kept to its lonely orbit around the dying earth. How much longer it might have continued thus is indeterminable, incalculable.

Space-wanderers from distant Zor, a world of another system found the professor's rocket and recalled his brain to life. More than that, they made him one of them, a Zorome, a machine man, an organic brain in a metal head, its needs supplied chemically, proving that a brain, properly housed and cared for, can do much better freed from the erratic diversions of an organic body.

Long ago, the Zoromes had made themselves like what they had made the professor. Their cone-shaped heads possessed a complete circle of eyes, and a single eye situated in the apex of the metal head to allow vertical vision. Their metal-cubed bodies possessed four metal legs and as many, or often more, tentacles. Professor Jameson developed their modes of telepathic discussion soon after his brain transposition.

On their way back to the planet Zor, they stopped on different worlds of various systems, experiencing many strange and bizarre adventures in which the professor often figured prominently. Back on the planet Zor once more, they found Zor and its sister worlds menaced by a race of creatures from a neighboring system. Space war resulted, and in a long, hectic, dangerous struggle the machine men of Zor and their organic brethren emerged triumphant.

Marooned on a world of the enemy system, Professor Jameson and 6W-438 were later picked up by a ship of Zor and returned to the home planet of the machine men. Not long after this, another space expedition was fitted out under the supervision of the professor and 744U-21. Once more they embarked upon a long journey into the far-flung realms of the remote, twinkling stars, another argosy of discovery, exploration and adventure.

Chapter I
Antiquity's Shadow

Into the dazzling, sun-lit system of seven worlds sped the machine men's space ship. A consultation between the professor and 744U-21, joint leaders of the new expedition, had decided upon investigation of the sixth planet. From afar, their telescopes had found that the three inner planets did not rotate, and closer examination of the fourth and

fifth planets had brought about the discovery that they lacked an atmosphere. The parent star, or solar orb, was of unusual brilliance and incandescence, and the machine men well knew how hot and how cold the opposite hemispheres of these airless worlds must be, as they were unprotected by an insular blanket of ozone.

The new expedition which had left Zor not long after the termination of the space-war comprised forty-three machine men. Professor Jameson, better known to his mechanical brethren as 21MM392, and 744U-21 had gathered what was left of their old expedition and had augmented this force with many new personalities. Among the adventure-scarred veterans still pregnable to the lure of the mysterious cosmos, and who had come through the war with the Mumes with undamaged heads were 6W-438, 20R-654, 41C-98, 29G-75, 6N-24, 47X-09 and 2Y-4. Then there were three of the four converts from the ranks of the Tripeds. Glrg, Ravlt and Jbf were known among the Zoromes as 454ZQ2, 92ZQ153 and 5ZQ35. Remnants of the old expedition numbered twelve.

Thirty-one new recruits made up the remainder of the metal crew. Of these, less than half had seen experience with former expeditions. New to the life of the cosmos with its unrepetitious and multi-faceted situations was 119M-5 who before her brain transposition to the head of a metal body had been known among the flesh and blood Zoromes as Zora. Bext, now known as 12W-62, who in the organic life had won the love of Zora and pursued it to a tragic end, was also a new member of the expedition. Now, both were machine men, passionless and practical to extreme.

"Parts of the planet we are approaching seem well covered with vegetation," observed 41C-98 from his position at one of the telescopes. "It is a good sign."

"Yes, but what of those rough, bare spots?" queried 744U-21. "There are plenty of them."

"Desert, I should say," was 41C-98's reply. "They are still quite difficult to make out."

Professor Jameson, at one of the telescopes, peered intently at the gibbous surface of the sunlit portion which swelled in his vision, as the space-ship raced into the planet's gravitational attraction. It was indeed a huge world, twice the size of his planet, earth. Already, they had discovered that the density in this planet they were approaching in proportion to its size was less than that which the professor knew had characterized the earth. This world boasted four moons, three of them little more than insignificant satellites of well under a hundred miles in diameter, while the largest of the four was somewhat larger than its three contemporaries combined, possessing a diameter of over one hundred and fifty miles. Still, as moons went, it was a very small one.

As the space-ship plunged nearer the surface, the professor saw what appeared to be yellow, rough splotches of color scattered among the fertile portions of the hemisphere they were approaching. These spots were difficult to define other

than that they appeared to be barren spots. Vertical vision failed to give the professor a satisfying perspective, so he levelled his telescope towards the horizon to obtain more of a lateral view. He obtained this at the price of clarity, atmospheric abberation and density blurring and distorting the yellow formations.

But close investigation proved the professor's unvoiced suspicion. They were buildings of a sort, proclaiming centers of intelligent inhabitants.

"Head for one of the lighter areas in the vicinity of the vegetation," he told 20R-654. "They appear to be cities."

744U-21 took a long, searching look as 20R-654 headed the ship for a stately pile of buildings near the edge of a vast purple and green growth of vegetation, which proved on closer examination to be a forest. In the distance lay a gigantic area of smooth azure, evidently a huge lake or sea. From it radiated tiny, irregular ribbons of silver, one of them forming a semicircle about the cluster of buildings they were approaching.

The space-ship of Zor came to rest in the shadow of purple foliage a short distance from the city. The Zoromes had deemed it inadvisable to land inside the city for several, obvious reasons. Twenty Zoromes were selected to stay with the space-ship which was to rise and circle above the city, while the remainder of the machine men entered the city on foot. The machine men had learned caution on previous occasions of landing on a new planet.

Professor Jameson and 744U-21 were among those to first set foot on the surface of the world. While the space-ship circled on high, alert to scent danger of any kind, the twenty-three machine men walked slowly towards the walled city.

For a short distance, they progressed beneath the shadow of green and purple foliage rising from the ground on rusty brown trunks, partly tree and partly spreading vine, a veritable hybrid of botanic structure, and through the fringe of continuous canopy in the woodland copse they caught occasional glimpses of yellow-surfaced domes and walls. Quite suddenly they burst into the open before the high wall surrounding the mysterious piles.

"It is old," the professor referred to the city. "See the break in the wall where a portion has fallen inward. We can enter that way."

Other evidences of antiquity were also discernible as the machine men approached the gaping fissure in the wall. Lichens of various descriptions, some short and close cropped, others a hanging fringe, decorated various portions of the tall domes seen from without the walls.

"Do you suppose the city is abandoned?" queried 744U-21. "Its appearance suggests a lack of life inside its walls."

"Its builders may have died long ago," offered 47X-09.

"How old do you think—"

The mental remark of 12W-62 was never finished. The thought died there, as both his own and his listeners' attention became focussed on a flitting figure which stood limned in the fissure of the wall for a second, half crouching, then leaping out of sight beyond. So brief and in-

distinct was the sight of this apparition, that none of the machine men could describe what they had actually seen. There came to them the sounds of a faint scurrying on the other side of the wall, and then once more there reigned the perpetual silence that had greeted them and had put them in mind of the city's emptiness, a silence now broken only by the dull thuds and scraping and clattering of metal feet as the Zoromes climbed through the break in the wall.

Filing through over the rough, broken chunks of fallen rock, now powdered and worn in spots, the machine men paused and looked about them. To all appearances, it was a dead city, a city of unconjecturable antiquity. Most of the towering stone structures seemed fairly intact, however, though here and there lay scatterings of archaic ruins. A general air of lifelessness and quiet lay over the silent buildings, and the parasitic growth, unhampered and prolific, at the very doors of the edifices savored of desertion, a wholesale exodus of animation. Yet the metal travellers felt probing, invisible eyes upon them in spite of the apparent desolation and disuse. The flitting figure, seen momentarily in the rupture of the great wall, was probably instrumental in arousing this suspicion. Then too, the machine men's telepathic faculties felt vaguely the workings of mental perceptions other than their own close at hand.

With eyes staring from all sides of their heads, the machine men of Zor peered intently into all windows and breaks in the masonry from their vantage point just inside the wall. But if they were watched, their watchers remained well out of sight within the darkedned areas beyond doors and window squares, seeing yet unseen. The professor, scanning the immediate vicinity for some signs of life, noted that the building materials consisted of rough rocks cemented together with a composite the same color as that of the rocks themselves. The only difference lay in the rough, sparkling surface of the rocks contrasting sharply with the dull-surface cement work. The rocks were unhewn and betrayed lack of quarrying. Such roughness, the crudeness of which was made up for by the efficiency and wonderful lasting qualities of the cement, presented a not unpleasing design in the aggregate. The cement itself, the professor readily recognized, was of unexpected durability and strength. In most of the ruins, it was the rock which had broken and crumbled.

"Do you seek the creature who ran from the wall?" came the mental query from above in the circling space-ship.

"Where did he go?" 744U-21 asked.

"Into that opening low to the ground near the wall itself," came the reply. "There are others like the same creature in the city."

"Into that cellar," said the professor, pointing to the triangular opening at the very base of a building which reared its bulk not far from the wall. "That is where it went."

Ray destroyer held ready, 12W-62 crouched low and pushed his way into the triangular hole, the pro-

fessor and 6W-438 behind him. Inside the opening, there was a drop of several feet. They found themselves on a smooth rock floor. Stygian gloom lay beyond the aura cast by the bright triangle through which they had entered. 12W-62 and 6W-438 put their body lights into use.

In the bright glare, the machine men saw several figures cower and run aimlessly to and fro in the cellar chamber close to the opposite wall. There were seven of them, seven of the strangest looking animals the professor had ever looked upon in all his travels through the cosmos.

Like the machine men, they walked on four legs, jointed in two different places, however. They seemed to have no ankles, their lower leg bones terminating in soft, padded discs. Their upper appendages consisted of many long arms, arms like the thin, jointed legs of spiders. There must have been a dozen of these upper appendages, the professor surmised. The body represented about the same dimensions as the body of a man, although the torso trended towards an ovoid form. The head was strangest of all, being exceedingly diminutive. Its largest feature consisted of a loose, flabby mouth with hanging lips that gave the creature a crestfallen, woebegone expression. Nostrils were visible, though the faculty of hearing was not apparent in exterior detail.

The most remarkable feature which impressed itself upon the professor was the optical propensity of this species. The eyes represented a weird, yet practical, aspect. There were four of them, each optic situated at the termination of an angular pedicle rising some seven or eight inches out of the small head. These snaky antennae twisted and turned in all directions. At present, they were all bent towards the source of artificial light, curious and blinking.

It was unmistakable from their attitude that unnamable fear ruled them, that they were afraid of the machine men. There looked to be no escape, no visible doors or remaining windows, yet, when 12W-62 approached them, one leaped upon the shoulder of another and jumped upward out of sight. Another did the same thing with surprising agility.

"We must sieze one of them!" Professor Jameson exclaimed. "They seem intelligent enough for questioning!"

6W-438 sprang forward with 12W-62 just as two more of the creatures leaped on the backs of their companions and hopped upward out of sight.

"There's an opening in the floor above!" cried 6W-438 as he and 12W-62 each seized one of the wailing, terrified things who struggled to be free.

The wild scrambling to escape offered but little resistance to the machine men, the effort proving extremely futile, only bruising and scraping the bodies of the strange things. The professor found himself too late in capturing the remaining one, nor did he make an attempt to do so. Two were sufficient. The last of the seven leaped up and grasped something which dangled from above, then hauled himself up. The professor suspected that it was a leg

of his companion. This reflected well on their courage even though they had fled, he thought, and it proved their fidelity to one another.

The two captives were brought out into the daylight from the dungeon where they had sought refuge from this unknown menace invading the city. They were questioned, and as the professor had suspected, their intelligence rated low. It was somewhat below the level of an Australian bushboy, an earthly type which lay in the professor's memory, yet well above the mentality of the beasts he had known.

With difficulty, the machine men impressed the fact, upon the two captives, that none of their kind was to be harmed. How universal was the immediate supposition, the professor had found, that a newcomer, a stranger, was to be feared. From world to world, this attitude, in varying degrees, had been paramount. He had discovered this degree of fear to rest largely on the status of mentality. The more intelligent species, such as the Tripeds, had shown little fear, other than a guarded patience, until a stable acquaintanceship had come to exist. Ignorance invokes fear. It is the law.

From constant plying of questions, the machine men learned from the muddled replies and strange mental conceptions of the creatures, that they had not built the city—that no one had built it. The city had always been there, like the trees and rocks. They lived there, yes. Their people had always lived there. It was their home.

Darkness fell not long after this. The machine men of Zor let the two Queegs go and returned to the spaceship. Vocal utterance of the Queegs had been many, and though useless as far as conversation with the Zoromes was concerned, the machine men had learned in the common idiom, the names the four-legged things called themselves.

The machine men were only mildly interested in the old city and what they believed to be its unoriginal inhabitants. At least, if these were descendants of the original builders, the race had certainly degenerated. But the professor did not believe the present inhabitants to be descendants of the builders. For one thing, he pointed out the fact that the age of the city, though possibly running into many thousands of years, did not allow for sufficient time contingent upon the present degeneration of the species. Nature did not move so swiftly, either forwards or backwards.

The following morning, the machine men once more returned to the old city. This time, they did not find it necessary to seek out the Queegs. They came from their hiding places timidly yet trustingly, urged by an uncontrollable curiosity.

With the Queegs, the machine men set out and explored the city. The Queegs inhabited the ground floors for the most part, few of them ever venturing into the upper chambers for habitation. They were not pressed for room. Numbering probably less than five hundred in population, the Queegs, this particular community of them, found the city much too large for their accommodation.

Although the Queegs did cook their food, they wore no clothes or

other accoutrements of civilization. In spite of this, however, the professor had found that nudism or a state of semi-nudism was not always a mark of barbarism or savagery. Clothes were more or less of a peculiarity, usually worn from habit or requirement, such as protection against temperature, as ornamentation or as a harness for weapons and implements.

Among the Queegs there existed a paradoxical situation which greatly puzzled the professor. They were metal workers, many of their utensils and implements consisting of metal, yet the weapons, with which they killed their meat supply, were made of wood even to the tips, not so much as being tipped or barbed with metal. It seemed inexplicable of solution, unless the Queegs possessed a religious regard against metal as a means of killing. Careful questioning eliminated this possibility.

From a confused reply to the question of why they should not use metal weapons instead of wooden ones for slaying their meat, the machine men gathered of the Queegs that they believed the metal wore out sooner than the wood. In fact, the professor noted that one old Queeg in order to emphasize his point was insistent on this supposition, to the degree of exaggeration that a metal weapon was good for but one hunt while a woooden prototype lasted for many hunts. This was a strange viewpoint, and the Zoromes dismissed it as one of the mental vagaries of this strange race.

It commenced to look to the professor, as if their stay on this planet was to be a short one, another mildly interesting exploration of which there had been several since they had left Zor, events of the expedition scarcely worthy of mention beside the more outstanding adventures of the machine men. 744U-21 had discussed with the professor the advisability of leaving this world and examining the outer planets of the system.

The Queegs had spoken of a country several miles away where they went to obtain their meat supply. From the mental impressions of the many-armed creatures, the machine men conceived a barren, desolate country devoid of vegetation, supporting only the animals which the Queegs killed for food. The Queegs had a name for these things they hunted. They called them ohbs. Their environment, as the Queegs described it, however, the machine men doubted.

"Preposterous!" 744U-21 exclaimed. "It is another of their crazy tales—like that of the wooden weapons! We know that animals do not live without vegetation! They must have sustenance!"

"Perhaps a very scanty moss grows there, or short, sparse grass," offered the professor. "These people seem prone to exaggeration."

"Or the animals they kill may possess the ability to go without food for long periods of time," 5W-438 supplemented, "taking refuge in the protection of the barren territories from a hereditary enemy, the Queegs, perhaps, coming to the fertile areas only when they must eat at rare intervals."

"There is such a barren country not far distant," said 20R-654. "We

saw it from the space-ship, you remember."

"We shall go with them on one of their hunts," was 744U-21's ultimatum. "We shall learn if these strange conditions are true, and after that we can stop on the outer planets before leaving the system. There seems to be nothing extraordinary here."

Chapter II
Into the Badland

Sixteen machine men set out the next day not long after sunrise and started for the hunting territory where the Queegs promised that they would pack back much meat to last them for a long time. Fully thirty Queegs comprised the hunting party, armed with their long, wooden lances, points hardened in the fire and sharpened.

The tireless machine men adapted their pace to suit the Queegs, and soon the lush verdure of purple and green grew less, the trees and bushes becoming farther apart until they eventually died out at the edge of the badlands. And they were truly bad, not only from the standpoint of fertility but bad for travelling as well. Professor Jameson could not see enough sustenance to keep an insect alive. The walking was extremely harsh and treacherous, the ground rough, pitted and calcareous. Depressions, ranging from tiny pits to great yawning caves, dotted the lifeless expanse. The machine men saw outcroppings of metal from time to time.

"Iron, mostly," 8L-404 observed.

"And some nickel, too, among other things," added 12W-62. "It would seem to be a miner's paradise, if he were not looking for too valuable metals."

"It's a walker's nightmare," 6W-438 reflected as he scrambled out of a rough hole into which he had slipped.

The Queegs made easier progress than the machine men. Besides being more accustomed by experience to this jagged terrain, they were better adapted for more secure footing. Their four pads soft and shaggy found a grip, while the flat, smooth metal soles of the machine men slipped and scraped, stopping only when they met a projection between their feet and the planet's gravity.

They had come about four miles into the desert of rough country. Professor Jameson knew from the declination of the sun that the day was well into the afternoon. A day on this world ran approximately thirty-seven earthly hours, he had previously figured.

"Where are the ohbs you came to kill?" he asked of the Queegs.

"We should have seen some of them before this," was the reply. "It cannot be long now."

"Look!" shouted a Queeg. He was a short distance to one side of their advance. "There is one!"

He pointed with his lance. The machine men looked. They saw only the same rough, barren landscape, the same pitted scars and occasional outcrops of ore. The Queegs became excited and ran towards the spot where their fellow pointed with his lance. One of them lifted his weapon above his head and let it fly. Not un-

til the lance had struck quivering into the side of an indistinguishable gray mass did the machine men discern the quarry.

With triumphant yells and much excited jabbering, the Queegs hauled out their catch from a small indentation. It was much unlike anything the machine men had expected. In fact, they had known scarcely what to expect, so vague were the descriptions of the weak-minded Queegs. The animal, if it could be called such, appeared like a gigantic slug, fully half as large as one of the metal cubes comprising the body of a Zorome. As the Queegs hauled it out of the depression where they had found and killed it, the machine men saw that the underside of the ohb was possessed of the traction faculties governing the movements of snakes and worms. From all appearances, the ohb was an invertebrate, presenting a pulpy, unprotected mass of sluggish motion.

"Our theory of migration is gone," said 6W-438. "Those things don't move in and out of here as fast as they would necessarily have to move."

He looked ruefully at his scratched, roughened metal feet and then back at the soft, unprotected body of the ohb. Meanwhile, the Queegs had run on ahead, excited with the search for more of the ohbs. Lances flew back and were cast with power. The Queegs were fair marksmen; besides, they did not have to cast from any great distance. Their prey, as if ignorant of the impending danger and their fate, basked unheedful in the sunlight, two supple antennae on their heads waving lazily. The term "head" could be applied only to one end of their boddies, that end possessing the antennae and eyes. The ohbs were all body, possessing no appendages, their only features consisting of several small, warty knobs near the base of the two antennae serving for what the machine men rightly guessed were eyes. There was no visible mouth.

The machine men hastened onward to catch up with the Queegs who were killing more of the strange animals now abounding in more plentiful numbers, becoming more numerous the farther along they went.

"This is no hunt," said 744U-21. "It is a slaughter. Those things have no protection, no way to escape. They are so dull that they do not even realize their danger."

"How do they exist?" asked 119M-5.

"That is difficult to tell," said the professor. "It is possible that they are like plants in the respect that they gain sustenance largely from sunlight."

"They would die on a cloudy day."

"Unless they were able to store up such energy to be held in reserve."

One of the ohbs doubled its body and gave a high jump into the air after a lance had, from a careless miscast, pierced it slightly, surprising the machine men with its unexpected motion. The ohb wriggled quickly into a hole and out of sight, taking the Queeg's lance with it. The Queegs sought to catch it, but the ohb escaped down a tortuous passage leading into the ground.

The machine men noticed that from time to time the smooth skins of the ohbs became overspread with a network of capillary brilliance, like wet punk wood in the dark. At such times, their antennae shivered perceptibly, and others of the creatures came close and gathered around, all intent upon a localized section of the ground.

"They seem to possess a means of silent communication," was 6W-438's opinion, "but is is of such a low intelligence that we cannot grasp it, any more than we can view atoms without the aid of a powerful microscope."

"It is a radiation beyond our perception," 744U-21 summarized.

The Queegs were leaving their victims where they lay, intending to pick them up on the way back. Further and further they plunged their way into the barren country, and more numerous were the dull-witted ohbs they came to kill for meat. In the meantime, the machine men pondered the question as to how the things lived. It was 4lC-98 who offered the most plausible solution.

"They feed upon some substance which the ground yields."

"But it is not fertile. The ground here is despairingly sterile."

"Just because it is the usual thing for organic creatures, such as we have known, to exist on fertility does not set an unescapable rule," 41C-98 argued. "These things probably derive their sustenance in some peculiar way from sterility."

The ground grew rougher, the small pits becoming larger and deeper, the angular caves losing their mysterious extremities into the darkness. The corrugated lips of great cavern mouths yawned open here and there, often joined by ragged fissures of varying depth, the sides mottled and perforated, an insane design of uncertainty, of chaos.

The machine men found their progress more perilous and rough. Small projections broke off and sent them rolling into crevices from which their companions assisted them. 744U-21 bade the Queegs to go no farther, stressing the uselessness of it. Already, the creatures they hunted were so numerous that it was often with difficulty that the members of the party, both Zoromes and Queegs, avoided stepping upon, or stumbling over them. In their zeal, the Queegs had already killed more of the ohbs than they and their metal guests could possibly carry back to the ancient city.

To the Queegs, this slaughter of the defenseless ohbs, the chase, and the roaming among the pitted caves of the barren country represented a great lark, unexcelled recreation, and they were of no initiative to return, but the admonition of the machine men brought them to the resolve of turn-about. Slowly, keeping to the better areas of travel, they picked their way back in the direction of the distant forest, now but a heavy, purple line on the horizon.

On a thin ridge of precarious footing in the line of their advance sat one of the ohbs, its antennae waving mildly curious, its dull, knobby eyes staring and glassy. 6W-438 gave it a shove down the declivity with his foot. Instantly, it shone all over with the fine network of ra-

diance, a sudden palpitation of intricate lacework, a lacework done in fire. In the bottom of the cavity where it came to rest, its antennae waved excitely while the palpitations of light became soft, dying glows wandering here and there over the soft-skinned body. A general unrest became manifest among the surrounding ohbs, their antennae waving in aroused agitation, but as the one which 6W-438 had shoved down the spine of rock became quiet once more the others subsided, too.

Further along, one of the Queegs pushed an ohb unceremoniously off their chosen path, shoving it with his many arms and prodding it with his lance. There was no repetition of the phenomenon which had been occasioned by 6W-438's act. The grazing herds on every side, on ridges and in cavacavities, remained quiet. Exhausted by their efforts of travel and thrills of the chase, the Queegs made no attempts to kill more of the ohbs which were now so numerous as to be occasionally underfoot.

One of the machine men, 47B-97, took a false step and lost his balance, rolling and clattering amid a shower of loosened rock material into an oblong cavity where, with tentacles tangled and seeking to break his fall, he landed upon two of the ohbs.

Instantly, the bright glow previously seen upon the creatures spread threadlike over the two soft bodies, and their antennae fairly vibrated. The ohbs became virtually white with the cold light overspreading their bodies as 47B-97 scrambled to his feet and started climbing the rough side of the hole into which he had fallen. It was then that both Queegs and Zoromes saw the two ohbs execute strange maneuvers with a quickness their appearance belied. They leaped upward and clung to the machine man, their bodies burning with the cold radiance. The ohbs possessed no appendages, yet somehow or other they clung. 47B-97 shook them off and climbed higher. Once more the ohbs leaped up and gripped him, one upon his peaked head, the other hanging to a metal leg. He shook the latter off, but in so doing lost his grip, tumbling back to the bottom where he seized and was seized upon. With two tentacles, he enwrapped the excited ohb which clung to his head, while the one he had shaken from his leg now took a new grip upon a facet of his cubed body.

Aroused from their temporary inaction, the machine men shook off the first effects of their surprise and consternation. From his fore tentacle, Professor Jameson blazed away with his installed heat ray at the radiant ohb which clung to 47B-97's cubed body. The ohb writhed in agitation, the peculiar light of its body appearing to struggle with the burning intensity cast from above. Stubbornly, the ohb refused to loose its hold, and not until the professor had burnt clear to its center did the thing actually die. Even then, it still clung with a suction grip until a frantically flailing tentacle of 47B-97 smashed away the half charred remains.

Meanwhile, 2Y-4 had leaped into the cavity with his ray gun held ready. 47B-97 had now torn the se-

cond ohb from his head but both tentacles were enwrapped by the thing, apparently fused to them in some strange manner.

"It is eating me!" cried 47B-97. "It is eating my metal body!"

"Metal eaters!" cried 47B-97. Professor Jameson exclaimed. "They absorb metal!"

The machine men and Queegs were too busy, watching 2Y-4 dispatch the second ohb with the ray gun, to look about them. Had they done so, they would have seen coming from every direction a vast legion of hurrying ohbs, their antennae quivering, slight radiations of anticipation suffusing their leaping, crawling bodies. They were being called to the feast, a feast of virgin metal which the gluttonous appetites of their two companions had involuntarily revealed, just as though by vocal means they had shouted their amazing discovery. And now the machine men saw that the head of 47B-97 and his leg and body were slightly roughened and corroded where the two ohbs had clung. The metal had changed color slightly.

They were too stricken from this sudden, horrifying menace to notice the ominous hordes creeping up all about them until several of the ohbs leaped over the opposite side of the cavity and down upon 2Y-4 and 47B-97. A cry of alarm escaped one of the Queegs on the outskirts of the gathering as several leaping ohbs knocked him down and wriggled over his fallen body to gain the pure metal they sought.

His cry aroused the machine men and Queegs. The Zoromes spread a net of death about them with their ray guns, while the Queegs, alarmed yet stupidly unafraid of something which they never before had cause to fear, soon exhausted their supply of wooden lances. A flash of realization smote the professor. Little wonder that the Queegs used wooden weapons because metal points soon wore out.

Wave upon wave of the creatures flopped themselves toward the Zoromes and their organic allies, the Queegs. Resolutely, the machine men burnt them down; so slowly did they die that the increasing numbers more than replaced their dead. As far as the eye could see, from every hollow, every ridge, every cave, the aroused ohbs crowded steadily in the direction of one focal point, their antennae waving excitely while drifting, dying, enlivened currents of unnatural light permeated their bodies. Upon coming in contact with the Zoromes, this light increased to a dazzling intensity, yet strangely enough the light remained more or less internal; it spread no rays.

With as much disregard for self-preservation as they had shown when hunted by the Queegs, the ohbs, fully half as large as the cubed body of a Zorome, seemed possessed of but one unquenchable desire, and that was to glut themselves on pure, refined metal, free of all impurities and unmixed with rock and other foreign material, such as they found regularly in their daily diet. Nothing less than death stopped their mad charge.

"They're coming faster than we can kill them!" cried 744U-21.

Professor Jameson's heat ray still

directed itself upon a half dozen of the ohbs intent on feeding from the metal bodies of 47B-97 and 2Y-4. He looked out over the barren country. On all sides the ground had magically become alive. It literally crawled along towards the machine men to form a rising mound, a mound which threatened to become a mountain of live animosity. Machine men no longer were finding it possible to hold the irresistible horde at a distance. They were firing at the dazzling bodies which curled about their metal feet and leaped among their threshing tentacles. Out of a giant cavity not far away poured thousands of the ohbs, like devils of the deep called suddenly forth to rid the planet's surface of all existence.

A rushing wave of the insidious creatures, unimpeded by the desultory extermination by the Zoromes, suddenly piled down into the cavity on 2Y-4 and 47B-97. A sudden wave of hopelessness overspread the professor. The two were in a death trap, doomed. So were they all unless this rushing tide of destroying life, these apparently indomitable myriads of impending death, were not stopped.

A rapid calculation brought the professor face to face with the inevitable. Even with sufficient time, the machine men could never kill all the ohbs. The huge slugs knew no living defeat. All they knew was a satiated appetite or death. Probably, they were even unaware of death. Appetite and the means to satisfy it furnished their one purpose of living. To them, eating was living. The two occupations were synonymous. Even had the machine men been able to kill the ohbs as fast as they came within range, the power of their weapons was not inexhaustible. If the space-ship were only hovering above them, but it was not. Nothing like this had been anticipated, and the space ship was far away in the shadow of the ancient stone piles.

Professor Jameson shared his fears with 744U-21.

"If we might only gain a respite!" the latter exclaimed. "A refuge!"

The ohbs were leaping close and squirming along the ground, seizing the machine men's legs, glowing brilliantly from contact with the metal. Queegs were bowled over and crushed by the weight of the ohbs as they attempted to run and escape. They were frightened by the vast, inconceivable numbers of their recent prey, rather than by any sinister intent which the machine men feared from the ohbs. To the Queegs, they were assailed by an overwhelming mountain of flesh which threatened to crush their bones and squeeze from them their very life, a suffocating wave of organisms threatening their life breath, barring them from escape. But above all, the Queegs were possessed of a nameless dread, the worst terror of all, and this was occasioned by the complete reversal in the attitude of the ohbs.

Yet the ohbs bore the Queegs no more attention than they did the rough, metal-veined crags over which they clambered to seize upon the virgin metal of the Zoromes. The Queegs were but another obstacle, yet the former were too demoralized to think of this. The ohbs, other than

weight of numbers, possessed no propensities for harming the Queegs. But the machine men; that was different. The machine men of Zor had met with the unusual, the unexpected. Invincible to most of the dangers which menaced flesh and blood, they were now assailed by death in an opposite form. Harmless to the Queegs, the ohbs represented the doom peril of the Zoromes.

While the machine men fought off the grim, disgusting creatures, a cry reached them from under the heaving, glowing maelstrom of bodies which more than half filled the cavity into which 47B-97 had fallen and into which 2Y-4 had confidently jumped to his comrade's aid.

"21MM392! 744U-21! Help! We are helpless! They are all about us! Wet, clammy juices they exude from their bodies are turning our metal parts to a fluid which they absorb! If our metal heads are eaten through, we are doomed!"

In answer, Professor Jameson and 744U-21 blazed their weapons into the horrid, twisting mass of struggling ohbs. Charred bodies vibrated, growing dark and rigid with death, the intense brilliance expiring with life, yet there were too many of the things between the two machine men and their companions to offer hope of rescue.

"We are weighed down! cried 47B-97. "We cannot move!"

"Two of my legs are gone!" was 2Y-4's desperate entreaty for aid. "They have eaten into my metal cube! My brain pan is becoming thin! Do—"

2Y-4's thoughts were suddenly stilled. 744U-21 lifted his ray gun as the frightful horde in the cavity became augmented with new arrivals. The hole was now filled to a level with the feet of the machine men who fought about its rim for survival against the overwhelming menace. Other ohbs flopped, squirmed and jumped over their predecessors to be at the machine men. 47B-97 still cast excited thought waves which ended in unintelligible ideas abruptly stilled. The professor glimpsed insanity in those final moments.

Chapter III
Down the Tunnel

"A refuge!" Professor Jameson echoed the recent appeal of 744U-21. "We must try and fight our way to that large tunnel opening over there! At least, they can approach us from but one direction of the compass, while here we are entirely surrounded!"

"To the tunnel mouth!" cried 744U-21. "Run for it!"

Even as they broke into a run, smashing over the hills and clumps of moving ohbs, the machine men saw that from the tunnel there still issued a stream of the creatures menacing them, although the turmoil of the issuing thousands was over. Each step they made brought forth a glowing suffusion of light, to them a deathlight. Taking advantage of the duller senses of the ohbs, they progressed swiftly, the remains of their two companions still acting as a magnet for the hurrying thousands.

Into the darkness of the ragged maw they dashed, the gigantic hole

yawning with crooked-toothed mouth to receive them. Over the hurrying ohbs they ran into the deeper, darker recesses of the dismal retreat. The ohbs were animated with but one desire, to get to the heralded feast as quickly as possible, a feast of virgin metal announced by the radiating oscillations of many quivering antennae. Those upon which the machine men stepped grew suddenly brilliant, faltering in their hurried march, cross-swept and confused by this new attraction, yet pushed on inexorably by their hind companions. Strangely, the machine men, the object of the ohbs' desire, escaped right through their ranks while hurrying in the opposite direction, like the ship which miraculously rides the crest of the tidal wave.

To be possessed of but one ambition is to be unswerving. The ohbs were more than this. They were devoid of reason, actuated by instincts, and all their instincts were being guided by the swarming cavity where the two machine men were being rapidly absorbed by some favored dozen or more of the ohbs fortunate enough to have arrived earlier at the banquet.

So long as the Zoromes did not pause in their flight over and through the ranks of these organic, metal absorbers, just so long their possibilities of survival remained. To stop was to commit a rash mistake, an abandonment of hope, a signal for a focal point of the dread destroyers of metal. The last machine man to enter the tunnel caught a final glimpse of a rising mound of twisting, repulsive bodies over the remains of 2Y-4 and 47B-97, a living shroud, a multi-active gravestone. Surviving Queegs struggled, shrieked and ran in several directions. They had seen the docile become stampede-mad; those things which had always submitted meekly to death in the form of the Queegs' wooden lances had been metamorphosed into dangerous animals. So did it appear to the Queegs, regardless of the fact that the ohbs had not attacked them purposely nor desired to do so.

What few of the Queegs had been killed were those unfortunates fallen and crushed beneath the combined weight of the surging hordes. They ran, yet none followed the machine men into the tunnel. They avoided the tunnel for some reason, probably fear, an instinctive desire to remain beneath the sky in the open. The Queegs had entered a few of the tunnels on previous occasions, and some of them had never returned.

Professor Jameson hurried along with 6W-438, both machine men running and stumbling side by side. Behind, came 744U-21 and the remaining Zoromes. The darkness of the tunnel was weakly lit with the intermittent flashes of light elicited from the ohbs on which the machine men trod. The light cast upon the rough walls was but a weak dissemination of the brilliance possessed by the strange creatures, yet it served to light the way. Not until the flashes from the trampled ohbs grew fewer and farther between did the machine men bethink themselves of their body light. Then, one and all turned on their own brilliance and sped

onward less hesitatingly, free of the reluctance lest they wreck some part of themselves blindly against an unseen angle of the tunnel, for there were many twists and turns.

How far they kept on in this manner, the machine men found it difficult to estimate. Suffice it to say, they soon found the last of the hurrying ohbs and passed it. Those of the things they found from then on were composedly eating away at various portions of the tunnel. The Zoromes assiduously avoided them, the latter taking scarcely any notice of the machine men, ignorant of their appetizing composition, painstakingly extracting and absorbing the metal from the tunnel walls and floor. Here, the machine men found that the ohbs did not possess the ability to cling tightly against the force of gravity they had displayed against the machine men. This, the professor believed was due to a more magnetizing influence of pure metal.

After passing the last of the hurrying cavalcade headed for the tunnel's mouth, the machine men slackened their mad pace and viewed some of the characteristics of the winding thoroughfare they had entered. It was anything except straight, and the floor was everything except smooth. The tunnel's course meandered in every direction. Farther along, it occasionally dropped downward. As the machine men guessed, the subterranean passage had been made by the ohbs following the eraticities and convenience of a favorable vein of metal.

The tunnel inclined; it turned in all directions; it declined, sometimes falling away before assuming a level once more. It grew narrow, so narrow that the machine men could scarcely crawl through it, and then again it broadened out so that its walls became lost in the gloom on either side. The ceiling was scarcely ever high above the conical heads of the Zoromes. Gravity had deprived the slugs of the ability to eat the ceilings. The surface was rough. Here and there pillars had been left standing, the ohbs having eaten around less favorable parts of the lithosphere. The machine men saw that openings branched away in all directions.

"The ground beneath the sterile sections of this world must be honeycombed with tunnels such as these," Professor Jameson observed.

"What shall we do?" queried 6W-438, thinking more of their immediate future than he did of theorizing on the probable conditions of the planet. "How are we to escape?"

"We can do little better than wait, until the beasts above us have become settled in disposition," said 744U-21. "Then we must try for our escape, avoiding the ohbs and reverting to haste in case they become arroused."

"When the Queegs return to the city without us, the space-ship will come in search of us," the professor stated.

Heads were counted. There were fourteen machine men present. But two were lost, and all knew what had become of them. Sixteen machine men had accompanied the Queegs on their hunt, the remaining Zoromes left to explore the mysteries of the ancient city or else otherwise occupied themselves on board the space-ship.

Many long hours passed. The fourteen Zoromes waited patiently in a hollowed cave which they had rid of ohbs by use of the ray guns. Opinions were expressed concerning the ohbs and their strange propensity for metal assimilation, and guesses were ventured as to how long it would take the Queegs to escape the badlands and return to the city. On various parts of their metal anatomy, the machine men found corrosive spots to which the ohbs had briefly clung. In the run through the tunnel, one Zorome had bent a leg in stumbling down a vertical declivity. All were scratched up considerably.

"On our return to the surface, we shall find the ascent more difficult," prophesied 12W-62.

"We may have to help one another," said the professor. "There are some difficult stretches we passed."

"These things we have encountered are the most malignant menaces to our existence we have ever come across since our adventures on the planet of the double sun," spoke 41C-98.

"Yes, but in this case we can come to grips with our foe. On the planet of the double sun, the Emkls spread their menace from another dimension."

In this manner, the machine men of Zor passed a sufficient time to feel assured that the danger above was over, or at least lessened. They contemplated a return back the way they had come. The way they had come had led gradually downward. Had not a sense of declined direction possessed them, they would have realized their deeper penetration by the temperature increase. In the depths, they were slightly closer to the molten center of the planet which, like most planets sustaining life, was more or less of a cooled crust enclosing a super-heated sphere.

They retraced their steps, realizing that they had a long journey before them, made long through the characteristic ill going. Care was taken to avoid contact with the ohbs they occasionally came across. The machine men noticed that the ohbs were found in gatherings, small colonies. To find one ohb was to expect several or many. None were found in isolation. What seemed more peculiar was the lack of skeletons. The things were boneless, a weak cartilage coming the closest to skeletal framework. There were no remains to be found. Bacteria did a thorough performance with this species.

Ahead of them, 6W-438 made a startling discovery.

"The tunnel is swarming with ohbs!"

Carefully, they came forward and shone their body lights ahead of them.

"Do you suppose they scent us in some strange way of theirs?" 744U-21 suggested.

"They do not act as if they were at all aware of our presence," said the professor. "See how intent they are on feeding."

"There may be a clear space beyond them," was 12W-62's opinion. "Shall we try a dash through them —touching as few as possible and holding our weapons ready?"

"Two of us can do that and report back," said the professor. "You and 9V-474 can go."

While the rest waited, the two machine men, gripping their ray guns, ran through the scattered assemblage of ohbs. A few were touched, giving forth their exudations of light and becoming immediately excited. Their antennae vibrated, and their nearer companions came close about them, expecting they had found an unusually attractive vein of superior metal. 12W-62 killed but one of them, an ohb he landed squarely upon with two metal feet. A maximum brilliance enveloped the strange creature, and its excitement was seized upon by the rest, spreading like a contagion. To avoid endangering himself and his companions the machine man burnt it up with his ray gun.

The two Zoromes passed out of sight around a bend of the tunnel. From them soon came a radiation that they were once more in the clear. The waiting Zoromes followed.

"It seems strange that so many of the things could congregate in that one place since we passed it on the way down the tunnel," 744U-21 remarked. "I cannot recollect having passed so many of them at one time."

A suspicion was growing in the professor's mind, yet he concealed it as best possible from the rest. He did not care to jump at conclusions. It was better to wait a while.

"This is not the way we came," 6W-438 finally announced. "I have felt it for some time."

"There are several inclines we should have passed before this," said 12W-62.

"We have come back the wrong way."

The machine men stopped and pondered the situation.

"Let us retrace."

They started back the way they had come. Once again, they dashed through the colony of malevolent ohbs. They came to a dividing of the ways, one tunnel splitting into two at a very acute angle.

"I do not recollect which tunnel we came through," 744U-21 confessed. "In fact I do not remember there being two tunnel mouths so adjacent."

"It would not have been noticeable coming from the other direction," said the professor. "The adjoining cavity might easily pass for a blind pocket. Returning makes the difference. Our lights shine upon no end wall, only into interminable depths."

"Which shall we take?"

"Divide up."

"To divide up means to become lost from one another," was 744U-21's ultimatum.

"We are lost now."

"But we are all lost together."

"One way seems as good as another," said the professor. "Let us try the right tunnel, and then if it does not lead us back to familiar spots along the tunnel by which we entered, let us return and try the other one. Tax your memories for familiar characteristics. Let nothing escape your attention."

The machine men did as advised. They kept onward along the convoluting tunnel, hollowed out by the insatiable appetites of the metal absorbers. Side tunnels, many of which doubtless joined or broke up into blank pockets or into multiple tunnels, spread to left and right. They finally came to where the passage they were following

dwindled, then grew larger once more, finally ending in a pitted wall.

"The wrong way," said 6W-438. "Luck is against us."

"The chances are against us, you mean," was the professor's utterance.

"We must go back and try the other division."

Wheeling about, the fourteen machine men started back to find and explore the divergence they had discovered in the wrong tunnel they were following. At right angles to their course a yawning intersection lay. Several of the Zoromes claimed they had come this way. Others claimed they had not, that there had been no turns as sharp as this one. Still others among the machine men allowed that even sharper angles than this had been encountered, yet the right way led straight ahead. A few of the Zoromes were uncertain and awaited the outcome of the discussion.

"Stop!" the professor cried. "We argue in vain, to no end! It is a veritable sponge of passageways, this ground! A maze of tunnels! We are lost in a labyrinth!"

The shocking truth was received in mental silence and contemplation. The machine men realized quite suddenly their confusion. They were lost, and every move they made was taking them into more hopeless drains on their remembrance. Here, there was hardly anything to remember. All the passages they had been in bore the same characteristics. They rose on an incline; then fell sharply, curved and even spiralled. Sometimes the machine men scrambled upward; then again they slid and stumbled downward, often in narrowness that scraped their metal bodies in passing through. Again, the tunnel grew wide, occasionally high in some spots.

The floors, even as the ceilings and walls, were a chaos of roughness interspersed with stalagmites and stalactites, pillars, too. These were not formed from subterranean drippings, however, but were the results occasioned by the wandering caprices of the ohbs. Like a worm-eaten tree, there existed no symmetry or beauty to the columns. Here and there on the tunnel floors lay accumulations of dust and hard bits of material the ohbs had not been able to eat. Often, on the sides and ceilings, fragile, untouched, lithospheric lacework crumbled and became debris in the passage of the Zoromes as the latter pushed their way through the seemingly endless maze, bringing this chaos down about their heads as they advanced.

In caverns low and broad, they found where cave-ins had occurred, where unsupported weight from above had yielded to gravity, filling parts of the intervening area eaten away by the ohbs. It was the professor's concensus that the ohbs turned much of their provender into a gas, slowly escaping from the pores of their skin. He had examined several of the things quite carefully, approaching close yet not touching them. 744U-21 believed that much of the metal absorption was consumed when the ohbs became suffused with their strange brilliance. By turning off their body light, the machine men found in the Stygian blackness permeating

this underworld of chaotic thoroughfares that the ohbs were always visible as soft glowing hulks against the darkness. Their intensity of brilliance often varied.

"We must get out—some way!" 119M-5 exclaimed.

"How?" queried 377X-80. "Other than roaming until we come out upon the surface?"

"That is so," said the professor, "yet we can apply some logic to such a design of meander."

"What do you mean?" queried 744U-21.

"We can continually follow the courses which incline upwards. This should keep bringing us closer to the surface. It is logical to assume that there are many tunnel entrances leading from the surface."

"If we could only find one of them."

"We must follow the inclines."

The machine men employed this seeming expedient, yet it availed them naught. Practicable in theory, it proved, as it often the case, the antithesis of expectation. The inconsistency of the labyrinth was responsible for this, mocking their painstaking, theoretical conclusions with an intricacy of illusory promises. Inclines led often into deeper points, like a rising hill on whose other side drops the ravine. To choose a sloping hole yawning from the depths of the planet often proved an eventually sharp rise again. The machine men did not choose these latter chances through choice. These saturnine futilities of the labyrinth impressed themselves involuntarily upon the Zoromes, giving them the passages which led into end caverns against blank, pitted walls or into deeper areas.

There was always the constant menace of the ohbs. These things were stumbled upon unexpectedly, often in innumerable numbers, again in scattered groups. Dark, perpendicular holes of indeterminable depths lurked for them, ready for the unwary. 6A-491 fell into one of these and bent a metal leg so that it became more or less unmanageable. With difficulty, he was extracted. The simple expedient of filling the hole with debris until he could reach high enough to cling to a lowered machine man was the means of his withdrawal from the depths of the abysmal pit.

Halting for another conference soon after this distressing episode, the machine men, in keeping with their buried surroundings, manifested hopelessness and gloom. It was the general belief that they were no better off than when they had started their carefully planned attempts to follow only the inclines. The professor confessed the failure of his plan. He believed they were even farther beneath the surface than previously. A slight increase of temperature permeated the linked, inescapable dungeons.

After this, they roamed aimlessly, always keeping together. How much time had passed they did not know. Professor Jameson guessed vaguely that at least an earthly week such as he had once known had elapsed. Yet the professor underestimated, basing his computations on the distance they had tramped almost continuously, and of the distance they had covered he possessed only a

vague idea. Their hopeless situation brought back to his mind the delight and wonder he had experienced as a child in that far-gone age, millions of years past, in another life, when he had taken pencil and started at the center of a maze to find his way out. How simple had been that two dimensional game of restricted limits compared to this chaos of interlinked and twisting convolutions spreading in every conceivable direction.

Chapter IV
A Morbid Prospect

Fatality loomed over catastrophe. A rock-fall, having waited long for just such a slight, shuddering vibration of the machine men's passage as now occured, buried four of the Zoromes in a broad cavern, completely blocking the forward advance of the column. It was a long arduous task of digging out their buried companions. Three of them were caught in the rock-fall, reporting their damages as best they could from their immovable positions. Legs and tentacles, even metal bodies, had been damaged in the fall. 970Q-17 had been in advance of the main body of Zoromes. Now, he lay in the far side of the fallen debris, partly free of the slide yet unable to extricate himself.

19K-59 and 284D-167 were dug out, and 8L-404 was not far from the course of their excavating when an alarmed cry issued from 970Q-17.

"Ohbs are approaching!"

It was the ever present menace of the labrinth.

"Lie quiet!" Professor Jameson advised across the impassable weight of intervening debris. "Can you use your ray gun?"

"It is buried!" came the disconsolate reply. "Part of my head and two tentacles are free!"

The machine men increased their efforts at removal of the fallen shale.

"There are three of them," came 970Q-17's thoughts. "Now, four. They are examining the edges of the rock fall for metal."

"Remain quiet!"

"If they approach too close, use your tentacles which are loose. Kill by contraction."

Thus the machine men of Zor advised their helpless and imperiled companion whom they were working desperately to reach.

"They are edging this way slowly!" said 970Q-17. "One of them will soon discover me!"

The machine men worked faster, yet feared they could not reach their companion in time to avert disaster which would result if an ohb came in contact with 970Q-17. His only chance rested in the possibility of the ohbs overlooking him.

But the long chance failed; the anticipated occurred.

"An ohb is coming closer! It is only inches away!" There followed a momentary pause, tense and drawn out. "It touched me!"

Barred from the grim tragedy, the machine men saw through the mind of 970Q-17 the fateful menace grow suddenly brilliant, its antennae vibrating excitedly, greedily, as it seized with astonishing swiftness upon the coned piece of metal

protruding from the mass of fallen roof. The machine men also visualized a rapid, flickering tentacle which wound itself around the inner fires of the pulsating monster, squeezing madly until the thing separated into two parts, the flaming brilliance disappearing immediately. But three more of the hungry things wrapped their hideous, shapeless masses of flesh about the imprisoned machine man and slavered their corrosive juices upon him wherever they touched his metal head.

The tentacles wrenched one free and threw it forcibly against the farther wall where it lay stunned momentarily before creeping back to continue its deadly, purposeful design. Another of the ohbs the machine man ground desperately to torn shreads, using both tentacles in a spasm of repulsion and terror. The remaining monstrosity of glowing body clung relentlessly, and as 970Q-17 battled this ohb, the machine men saw through the eys of their stricken comrade something which caused them to give him up immediately as lost. Attracted by the agitation of the persistent ohbs, more of the hideous species trouped rapidly into the cavern and set upon 970Q-17 in hopeless numbers.

It was soon over. First, the wildly threshing tentacles became dissolved and weakened in spots so that they broke and were hurled by the fighting desperation of the machine man across the cavern where on-coming ohbs fell upon the bits of metal and glowed brightly. This was the beginning of the end. Every available inch of 970Q-17's head became covered, while more of the sinister dwellers of the badlands pushed and nudged at their companions to be at the inaccessible delicacy of pure metal. 970Q-17's brain emanations were soon stilled. He died uncomplaining, like a true adventurer of the cosmos, the moment that his metal tentacles were eaten away and he found himself completely helpless.

The machine men on the other side of the rock-fall slowed their operations. 8L-404 who still lay buried but alive and protected from the ohbs, they finally reached. There were three survivors of the four who been buried. 284D-167 was so badly damaged that they knew he would never walk again on that set of legs and dented body. He was fortunate to have survived at all. His head had weathered the catastrophe. His head was removed from the wrecked body and carried by a metal companion.

8L-404 had two legs and three tentacles irreparably damaged, while 19K-59 had lost one leg and a tentacle. From the abandoned body and limbs of 284D-167, a metal leg and two tentacles were found serviceable. These parts were given the two deficient Zoromes and were fastened upon them in place of the damaged counterparts. Each of the two now hobbled forward on three lower limbs.

The advisabilities of digging onward to where 970Q-17 lay in order to salvage his remaining appendages was suggested. Both the professor and 744U-21 turned against this.

"By the time we get to the metal

body, the ohbs shall have consumed it," Professor Jameson stated.

744U-21 feared, too, that digging to the other side of the cavern, with its aroused, metal-craving ohbs, would be too much like inviting disaster.

"The cave-in exists as a wall of defense," he said. "We have failed to save 970Q-17. Let us not tempt fate but go back the way we came—to try and find a way out."

Once more they set out to find the elusive, a way out of the baffling labyrinth which held them captive. They wondered about their companions in the space-ship above ground. Were they looking for them? How? It would be foolhardy for them to penetrate into the labyrinth and become themselves lost, too. Perhaps they listened that moment with the thought detectors, hoping the buried machine men might stumble luckily upon a release from the intricate maze.

It was the professor's expressed opinion that those above ground were doing all in their power for the lost machine men, yet which seemed within their power to do appeared puny. There was no way of getting to the lost Zoromes other than risking the peril of becoming lost, and two parties of Zoromes in the myraid intersecting tunnels with their numerous blind ends possessed the same chances of finding each other as they did of finding their way out again. Once more they took up the monotonous march, the perpetual quest for the seemingly unattainable. These dismal places of the subterrain mocked them.

Added to the hopelessness of escape was the vicious menace of the ohbs. Like the sword of Damocles, their unceasing threat hung another weapon, over the prospects of the Zoromes. Often, the machine men stumbled over one of the partially hidden creatures buried in a pocket of ore. There ensued the whitening glow and the excited quivering of the antennae. The machine men either killed the menace before it had time to summon unwittingly its hideous brethren, or else they ran, so that on the arrival of the nearest ohbs the objects of their agitation were gone. Forgetfulness by the ohbs was the salvation of the machine men. The Zoromes were not hunted. Discovery came by their own accidents.

Once, when several of the machine men had slid down a rough, sharply sloping hole, they found themselves in the midst of several of the deadly creatures before they could warn back their companions who came sliding down behind them. Flashing lights revealed more of the things beyond. There was one avenue of escape, a low passage to one side of the larger cavern. Into this they dashed, leaving behind them a congregating horde of the metal absorbers.

Down this tunnel the machine men rushed while behind them they left an excited gathering whose quivering antennae bore a false promise of virgin metal, false because their excited wanderings in the immediate vicinity disclosed only the partly eaten walls of ore. As before, the Zeromes escaped the scourge into whose danger they had momentarily stepped. But soon

they ran into another colony. Without slackening their speed, the machine men ran over and through the bright glowing denizens of the depths. Then suddenly, before they had cleared these last ohbs, they ran into a pitted pocket, the blind end of the tunnel. Rivalling the glow of the machine men's lights, the ohbs waxed brilliant in contact with the metal legs and feet of the trampling Zormes.

Rapidly and also fearfully, they searched for openings of escape which did not exist. Quickly, they seized upon the one chance left them. Shaking off the avid creatures, striking recklessly and purposefully with their tentacles, the machine men sped back the way they came. In dismay, they halted quickly on rounding a turn and perceiving a fiery glow ahead not more than fifty feet distant, travelling ominously towards them. The colony of ohbs they had recently escaped was answering the inevitable call of their aroused companions in the passageway's end.

"Trapped!"

That single thought from 6W-438 was illuminative of the entire situation. The ranks before them had been swelled to such an extent that excape through the ohbs seemed nigh impossible. On came the metal-eaters, tumbling over one another in a flapping, squirming, hopping wave of glowing anticipation. Salivary glands all over their soft bodies were watering beforetime in prospect of the expected feast. The machine men spread a halo of death into the hurrying vanguard, meanwhile backing off, knowing full well from experience that these abominable dwellers of the desert wastes died much more more slowly than the advance of too eager and unfearing reinforcements.

"Watch out behind!" warned Professor Jameson, remembering that between them and the cave's end lay shadows of death even as before them.

Maintaining an effective barrage, the machine men retreated, holding off the insidious ohbs, yet constantly losing ground and placing themselves nearer the menace from the tunnel's end.

"Turn!" cried 41C-98 who from the eyes in his rear semi-circle of vision perceived the slower ambling ohbs from the tunnel's pocket.

41C-98 whirled his ray gun and blazed away at these latest arrivals who had lost track of the pure metal which had so magically come and then gone, and which they had momentarily touched. Now, they sought vainly, and into their searching ranks flickered the ray weapon of 41C-98, temporarily halting their advance.

Professor Jameson visualized the end. The one free end of the tunnel swarmed with an impassable mass of metal absorbing flesh. They could never run through it. There were too many of the things to cling and drag them down, all the time turning their metal parts to liquid. The horde from the tunnel's end was not unsurmountable, yet futility mocked them from that direction.

They were once more in the same predicament as upon the surface; only before, they had fled into the labyrinth; this time, there were no places which they might run to; walls enclosed them. The ohbs, they

well realized, would increase five to one for those killed, their silent communication clamoring from their antennae like a shrieking siren of telepathy. To kill with the ray guns was to gain time, yet what did time mean to them? The professor searched desperately with mechanical eyes for some advantage to further their chances, at least prolong their time. Too, he searched with his mind, yet it was his eyes which first discovered that which his frantic brain almost simultaneously utilized. He saw that the rough, pitted walls of the tunnel, offering irregular projections, were fairly high here, especially so on one side, on the other side wall and ceiling merging close to the floor.

"Climb the side of the tunnel and hang tight!" he cried. "Use your ray guns to cover your retreat!"

Instantly, thirteen Zoromes scrambled up the side of the tunnel, two of them using but three legs and sorely missing the tentacles they had lost. One of the machine men who was fully equipped with appendages carried the head of 284D-167. Tentacles curled over rough knobs of rocky ore. Some of these broke, the tentacles scraping and curling madly for new holds. Metal feet dug into pockets of the mottled wall, often slipping and catching, or sending the machine man clattering to the tunnel floor among the leaping advance of the ohbs. Already now that the Zoromes had abandoned their fire, the ohbs were meeting from two sides in as many waves of gluttonous hope.

6W-438 was fortunate in his ill fated start, a veil of rocky material encompassing him and throwing him backward where clutching tentacles found nothing to clutch, clattering feet finding nothing to stand upon, each projection giving way as if with damnable intent of allying with the ohbs which now poured over the fallen Zorome. The ray guns of seven machine men bit like darts of death into the fighting creatures which sought 6W-438 as sustenance. As the rays became concentrated and burnt steadily deeper, the bright, glowing bodies grew suddenly dark. 6W-438 hurled them off him with mighty efforts and leaped quickly up the wall, the ray guns of his companions covering his retreat. This time, he sought and found more carefully.

Down below, the leaping, flopping ohbs were becoming so numerous and agitated as to light up the tunnel with a dull, fitfull glow of unworldly luminosity, and from the open end of the tunnel came pouring hundreds of the things.

The professor saw and recognized that very soon this tunnel would become a crushed, packed mass of flesh from top to bottom, and he knew that before that time the machine men of Zor would be lost, deprived of their senses, dead, disintegrated pieces of metal. Like water in a dammed-up pond, the hopelessly combatible numbers of the ohbs arose. There was but one thing to be done. The machine men did it. They climbed higher. The ceiling grew nearer, and the ravaging menace below crept closer to their feet. No longer did the machine men fire at the ohbs. Why bail water from the flooding river? Many of the Zoromes had climbed as high as possible, clinging with tentacles to the ceiling, their legs braced in niches or projections of the wall.

They were as high as it was possible to go. They would exist a few minutes longer; that was all.

The tide rose. Those upon the beach receded from the treacherous waves, climbing to the island's pinacle where they awaited philosophically the overlapping wall of total inundation which rumbled swiftly closer from far out at sea. The waves reached hungrily higher, lapping viciously the feet of the castaways.

Once more the machine men of Zor used their ray guns. Death rays, slow deaths to the ohbs, claimed those which fastened themselves about the feet and legs of the clinging Zoromes. Soon it would be the end, yet each Zorome remained adamant against complete resignation. Overwhelmed by superior odds, it was their way to die fighting.

894R-15, lowest in position on the wall, clambered upward as an ohb fastened itself to his leg. He shook the metal limb vigorously and curled a tentacle away from the wall in order to use his weapon. Vigorous motion, his progress up the wall, and the release of his tentacle in order to use his weapon became the overwhelming odds in a lottery of death. The crags to which he clung were treacherous; his feet did not find the crevices or projections they sought haphazardly; but a chunk of rock was the real executioner. It gave way.

Into the swirling ranks of ohbs fell 894R-15. A dozen ray guns blazed futilely. 12W-62 dropped lower, hazarding his own slim chances, clinging to frail, untested portions of the wall while he dangled two tentacles which grazed the horde of hungry ohbs, but to no avail. The doomed machine man disappeared by his own weight into the rapid moving chaos of the ghoulish ohbs. A brilliant blaze of oval light shone from the sea below, and that was all.

"Look! See what I have found!"

It was 119M-5, once Zora of the Zoromes, who had made a discovery of some sort. The projected thought of discovery was unexplanatory, yet in the thought the machine men detected a ring of hope. 119M-5 was farthest down the wall in the direction of the tunnel's end.

"What is it?"

"A cavity high up near the ceiling of the tunnel!"

It was the signal for an immediate exodus in that direction. Perilously, the machine men climbed along the treacherous wall with its inviting, yet sinister, holds. One of the Zoromes slipped and nearly met the fate of 894R-15. To lose hold of the wall was to abandon a grip on hope.

"Keep close together in a long line!" Professor Jamison cried in warning. "Cling with one tentacle to the one before you!"

This safety against the likely possibilities of a sudden fall proved its value. In this manner, two machine men were saved from possible deaths by this sudden freezing of the entire group to the wall when a misstep or broken hold occurred. 119M-5 waited by the entrance to the newly discovered cavity, firing at the ohbs which leaped and clung tenaciously to the feet of the cavalcade.

One by one, the machine men passed into the cavity, while below, the ominous flow of life rose higher, menacing the safe passage of the remaining Zoromes. Professor Jameson, 744U-21 and 119M-5 remained. Three of the brightly clinging ohbs

were feeding on the feet of 119M-5. Below, more of the churning mass reached upward, standing on end momentarily in their eagerness, then falling backward to be succeeded by others. Using his ray gun, the professor cleared the appendages of his fellow Zoromes and motioned them into the cavity they had found.

He was the last to enter, lifting his corroded feet and legs out of the rising legions of metal absorbers. His last glimpse of the tunnel saw a flickering slope of the abysmal creatures that had threatened to wipe out the entire party. They were flopping and jumping against the ceiling of the tunnel.

Of the island, only the topmost pinnacle uprose against the flood. A mighty wave bore down upon this. The pinnacle, however, was deserted, for the castaways had been saved. From Scylla to Charybdis, from the Caskets to the Ortach stone, not a great deal of choice yet an existence of hope.

The machine men found themselves in a low, irregular shaped tunnel which grew larger farther along. It was only another of the many freaks of the meaningless, chaotic labyrinth. Here was a passage which cut narrowly, transversely just below the ceiling of the tunnel in which they had nearly met their doom. Professor Jameson remained still mindful of the peril they had left.

"Let us hurry!" he exclaimed. "There will shortly be an overflow from behind into this tunnel!"

"Why was it the ohbs did not come from this direction, too?" 12W-62 queried.

"Possibly there are none in this tunnel," 744U-21 offered.

Chapter V
The Thread of Hope

They ran for quite a space, choosing cross passages at random. They had come to find that there existed little difference. Somewhere, there was a difference, a variation of choice which would lead them out of the labyrinth to the surface, but it was not in their possession to know.

Proceeding more leisurely, as there was no haste required in going nowhere now that there was nothing from which to flee, the machine men found themselves weakened structurally. In the escape from the ohbs, many of them had suffered corrosion from the avidity of the metal absorbers. Besides this, there were parts worn out from travel, not to mention the missing parts from three machine men, total in the case of 284D-167.

They were fast becoming a crippled group of subterranean wanderers, prisoners of the labyrinth, in captivity in a vast, never-ceasing network of cells. Yet, in the face of this, they kept onward. The Zoromes noticed a change in the character of the tunnels through which they travelled. For one thing, they were narrower and lower, possessing more pillars and columns. Also, there were fewer deviations and cross tunnels. Choice became limited, which was, as 744U-21 remarked, just as well perhaps.

"There is a noticeable diminution of metal in these last tunnels," the professor observed. "The ohbs did not find so much to eat here. It explains why there are fewer cases of cross tunneling and why we have

not seen any of the ohbs since entering here."

"It looked as if all the ohbs on the planet were in that one tunnel we left back there," said 12W-62.

They were a long ways from the place of their recent escape when 6W-438 stopped suddenly and called for silence.

"I heard something!"

Instantly, the clattering and scuffling of metal feet became still, the rustling of tentacles silenced, by rigid immobility. They all listened. From somewhere came a sighing ripple of noise, a tinkling sound as of many small voices merged in conversation.

"What is it?"

The question remained unanswered.

"It seems to be ahead of us," said 744U-21.

With one thought, that of immediate ascertainment, the machine men moved forward. They again stopped after a considerable distance had been covered. The sound now persisted clearly above the noise of their progression. A subdued, bubbling smote their hearing, mixed with a slight hissing and spattering. They listened.

"Water!"

"Can we be nearing the surface?" 119M-5 queried hopefully.

"Not necessarily," 6W-438 checked the rising tide of hope. "It is probably leakage of some kind."

"Or a subterranean river," 744U-21 suggested.

"We must find it," said Professor Jameson, "and we must exercise care so as not to wander off in a wrong tunnel."

They kept onward in the direction of the water. There was little fear of deviating, for there were scarcely any side tunnels, these cutting transversely in the direction from which they had come. The tunnel commenced to grow damp, and the machine men knew that they were nearing the subterranean waters. The sound of moving water increased to a rushing sound of many echoes. The Zoromes turned unexpectedly into a low-ceiled cavern, their lights reflecting from the surface of troubled waters.

They looked upon what appeared to be a small lake, or a large pool. While a lake is generally accepted as more or less dormant and tranquil, this subterranean lake was not. The tiny whirlpools, upgusing currents and lapping ripples which splashed the walls bore evidence of undercurrents. It was obvious that the water entered the cavern from a source beneath the water level and left it by means of another submerged channel. Turning their body lights all about them, the machine men, standing on the sloping ledge which reached off into the agitated waters, perceived that no tunnel, other than the one down which they had come opened upon the underground lake. The distance across was not far. In fact, the term lake seemed scarcely merited.

"It is the best chance we have been offered yet," the professor said.

"Of escape you mean?"

"To the surface."

"By following this underground river back to its beginning on the surface!" 6W-438 exclaimed, probing the thoughts of the professor.

"We can try," said 744U-21 hopefully. "It is our best chance."

"What of the currents?" warned

41C-98. "Water currents are often strong. Will they not sweep us downstream into a trap or unscalable abyss?"

Deep in the mind of 41C-98 was engraved an episode on the planet of the double sun where machine men of Zor had remained imprisoned in the depths of an oceanic abyss for several hundred years. Others of the machine men, survivors of the old expedition, shared this retrospect.

"We can only chance that. There are eleven of us, or twelve, including 284D-167. We must hold close to one another and enter the water single file. In traversing a swift current, we shall mass ourselves three abreast and twist tentacles."

The machine men lost no more time in speculation. In single file, they entered the water. The slope was gradual, and their coned heads disappeared slowly beneath the ruffled surface. In the tentacles of 377X-80 was held the staring head of 284D-167. Limping along on their insufficient quota of legs were 8L-404 and 19K-59. Soon, the cavern was once more deserted above the surface. In the watery depth, the machine men sank deeper and deeper as they followed the decline towards the cavern's center. Professor Jameson, his tentacles curled with those of 6W-438, led the way.

"Be fearful of going to some place from which we may find it difficult to return," admonished 744U-21. "We can always go back to the dry tunnels if we become blocked down here."

"This, too, may prove to be a puzzle," the professor warned. "It is but a section of the labyrinth flooded."

"But we have a path."

"It is true. The current is our pathway. We must keep to it."

And in the current, the machine men now found themselves. It was not too strong, however, exerting but a gentle resistance to their weight. The professor walked always towards the force of the current. To follow the path of least resistance was to become further lost in the intricate mazes of the flooded passageways.

The current became gradually stronger and restricted to a smaller area. What the professor searched for he soon discovered in the murky illumination from his body lights. A hole yawned in the wall just above their heads. Leading up to it lay an incline of hard-packed rock debris consisting of small stones and partially segregated ores, swept down by the force of the current from somewhere farther upstream. Up this incline, the professor walked, 6W-438 behind him. Rising up before the opening, Professor Jameson was met with a force of water-pressure which bowled him over and sent him rolling above the heads of his companions. A grasping tentacle circled the head of 9V-474, and 119M-5 pulled him out of the current to the cavern floor. Despite his metal composition, the force of the current could have easily swept him a goodly distance ere he regained a standing posture. He returned to the grouped machine men beneath the round hole of the inlet.

"Now is the time for our massed advance," said 744U-21.

There was but room for two machine men to crawl at once through the cavern's inlet. One offered less resistance to the strong current.

"We must combine our strength

and weight to shove several machine men through the opening so that they may cling to something and afford us a chain along which to move," the professor stated.

The machine men advanced in a compact square of nine, two machine men held in front of this square. Bracing themselves, the entire square stood still before the force of the gushing water pouring swiftly out of the hole in the submerged wall. One of the two machine men, 6A-491, was picked up and held poised. Headfirst he was hurled into the channel against the force of the current. He disappeared and did not return.

"I have caught hold!" he cried. "Send 41C-98!"

The second machine man went through the same procedure of being thrown into the current by the combined efforts of his fellow Zoromes. He seized the feet of 6A-491 and caught projections to which he held. By reaching as far up the tunnel inlet as his tentacles could reach and 6W-438 could push him, Professor Jameson clung to the feet of 41C-98. Over his body he felt the succession of remaining Zoromes as they climbed into the opening and took positions up ahead of 6A-491.

The last Zorome passed by him, and then the professor clambered over his metal companions in the teeth of the current to where the foremost Zorome clung to the curving, channel wall. Eleven lengths from the flooded cavern, the channel broadened and the current became less forceful through the fact that it was divided over a larger area of space.

"Where are we?" queried 19K-59. "Is this another of the caverns?"

"Perhaps," said the professor. "It makes little difference, however, for it is probable we are still far from our goal."

"Where do you think this water comes from?"

"A surface lake or river. When we see light other than our own permeating the water, it will then be possible to hope."

Once more the machine men found it practicable to walk in single file. Always they follwed the current. To divert from it was to imperil their chances. It was only too easy for them to walk down a flooded tunnel of still waters and into a submarine labyrinth. They had been fortunate in coming upon the main current. It was their thread of hope. Even so, Professor Jameson knew what might be expected of this thread. It seemed an even chance that the current might be sifted through an accumulation of stones further along, stones gathered by the current and past weaknesses of the channel walls. And then again, they might emerge into vast caverns where water poured and seeped through the ceilings.

Where did all this water go? Doubtless, beneath an impervious strata of rock from where it bubbled up as springs upon some other portion of the world. It was drawn up by the sun and cast down once more upon scattered sections of the planet. Some of it found its way once more into the labyrinth to start a new cycle of travel. Cycles, whether amazingly swift, or infinitely distended throughout incalculable ages, are the rule of the universe. Animation and

inanimation are both subject to this law. Cycles are discovered in myriad forms.

The machine men followed the current faithfully upstream. In vaster stretches of easier progress, they often came out of the water to find where they were. Invariably, they were in a cavern or broad, winding tunnel worn larger by the water. Sometimes, their prospective emergence from the watery depths brought them up against a flooded ceiling. Many of the caves and tunnels bore ancient trace of the ohbs. This part of the labyrinth was evidently older than that section in which they had become lost.

The holes into which they feared they might fall had existed only in theory. The few pits they discovered were shallow and not dangerous to their progress. It was probable that originally there had been many of these treacherous pits, but the underground river had filled them with silt and other inorganic materials to a level with the rest of the tunnel floor.

With the exception of the current they continually bucked, sometimes strong, sometimes barely perceptible, they found the walking easier than it had been in the dry tunnels. The water offered resistance, but there was no stumbling, slipping, sliding or treacherous rock slides and pits with which to contend. Above all, there was an utter absence of the ohbs which before had occasioned ceaseless vigilance. True, there were denizens of the subterranean waters, but they were not large enough to hamper the machine men, and the ray guns, working quite efficiently under water, counteracted these nuisances.

The machine men were pushing along, ignorant of whether night or day reigned above them, when a surprise greeted them. Professor Jameson suddenly heard himself addressed.

"21MM392!" He looked about him, expecting one of his metal brethren to have made a discovery of some sort. The others looked at him.

None of them had addressed him. That much was a certainty.

"744U-21! 6W-438! Come out of the water!"

All were surprised, but before they could form a query, its answer floated to them on the rapid wings of telepathic thought.

"It is I, 6N-24! 5ZQ35 and 27E-24 are here with me!"

"Where are you?" Professor Jameson called in rising excitement.

"In a cavern! Here, above you, to your right! Come out of the water!"

The eleven machine men scrambled up the incline towards the water's edge. The first head to break the surface stared into the glare of several lights. In the brilliance stood three machine men from the spaceship.

"How did you get here?" queried 744U-21.

"We came to meet you."

"Are you lost?

"No."

"How did you find us?"

"We have been following your course through the labyrinth with the thought detectors."

"Did the Queegs return and tell you where we went?"

"They came and told us you ran

into a hole in the ground when the ohbs went suddenly mad and congregated in astounding numbers. It was a puzzle to us until we discovered that the ohbs were eaters of metal, much like the pistols of the Mumes, except on a different principle."

"How did you get to this cavern?"

"We entered through the hole in the bottom of what the Queegs call the 'disappearing river.' You are not far from the surface now. We came to meet you. There was little else we could do. When you found the underground river and decided to follow it, we followed your course above the surface in the space-ship. We searched the vicinity for a lake with a whirlpool or a river entering the ground. We discovered the latter."

The twelve Zoromes, one of them but a metal head, were overjoyed to find that they had won out against the labyrinth, and that they were soon to be free again of the hated depths. With the three Zoromes who had come to meet them, they walked the remaining distance to where the river issued from its surface course into the ground. A diffusion of light spread an ethereal glow, intensely welcomed by the Zoromes, into a submarine cavern. Here, the machine men found more of their comrades. Reunited, they walked out upon the river bed and to shore.

Once again, they found themselves in the sunlight. Strange to say, they discovered that they were not so far from the ancient city as they had thought themselves to be. They had done a great deal of wandering in circles before finding the underground river. From then on, their course had been a straighter one. But even so, the old city with its strange inhabitants lay many miles off.

Professor Jameson and his metal companions once more found themselves in the spaceship of Zor, which headed skyward. The machine men, after their nightmare with the metal-eating ohbs in the dismal caverns of the great labyrinth, had no further desire to remain upon the planet. In fact, their recent experiences had prejudiced them against further exploration of the system, and they headed off towards the stars.

"At one time we contemplated shooting a depth explosion deep into the ground when you were in peril," said 20R-654. "We sailed high overhead and even took careful aim."

"You mean when we were in the tunnel full of ohbs?" queried the professor understandingly.

"Yes. 119M-5 found an escape just in time or else we should have dropped our depth explosion."

"You would probably have killed every ohb within a radius of a quarter mile."

"Our chances of survival would have been less than one out of twenty," 6W-438 pondered.

"A much better way to go," said 744U-21, recollecting quite vividly the fates of 970Q-17 and three others of the Zoromes.

"It was a much more tense moment at that time than you realized," was 29G-75's observation.

"Where and which way now?" queried 20R-654. "We were to have discussed that before leaving this system."

"Let us head in the direction of

(Continued on page 146)

PARADOX

CHARLES CLOUKEY

Illustrated by SKY WALITT

1929 was 39 years ago and is as remote to us as 2007—who knows what it will be like in 2007?—is the other way. Here, in a classic, Charles Cloukey examines time travel with an antique charm so thick that it can almost be cut with a knife.

"IT is impossible," stated Preston.

"Two hundred years ago any ordinary man would have said that television was impossible, and could have given several excellent arguments to prove it," returned Sherman easily. "Just because we can't do it now is no reason to say that men will never learn to travel in time as freely as in space. H. G. Wells, in his 'Time Machine' . . ."

Preston interrupted impatiently. "I've read the book. It should be obvious that Wells used the idea of traveling into the future merely as a background upon which to superimpose his ideas of the ultimate destiny of civilization. Since Wells there have been dozens of time stories, wherein the hero invents a machine, or discovers a ray, or something, which takes him immediately to the year 4443, or the day after tomorrow, or prehistoric times, or some other time, wherein he meets the beauteous heroine, et cetera. The writers of such stories follow a definite formula, gentlemen. They're a bunch of imaginations. The idea of time-traveling is a scientific absurdity, for dozens of reasons.

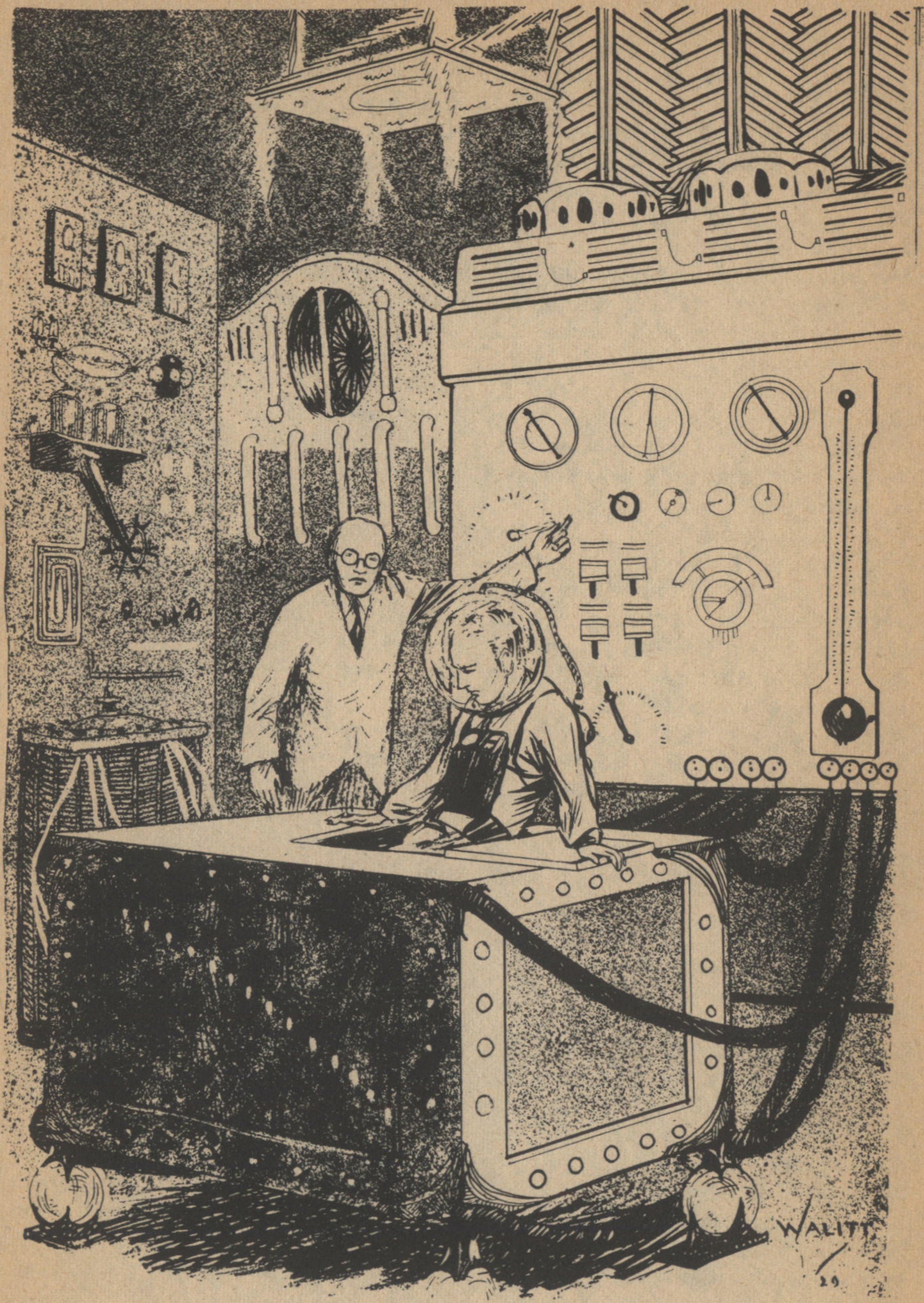
"Did you ever consider the fact, Sherman, that if you were to travel to the year 2000, for instance, through time or the fourth dimension, you would have to travel quite a few million miles through space also? For by the year 2000 this earth, and the solar system, and probably our whole universe as well, will have moved a long way through space from the place they occupy at this second. And that's only one of the many objections."

"I don't consider even that beyond the realm of possibility," replied Sherman. "When you consider the accomplishments of science in the past, it is rash to say that anything is imposs . . ."

Preston interrupted again. "You will find inconsistencies and paradoxes in any time-traveling or four-dimensional story if you look for them. And . . ."

"Undoubtedly. But suppose you told a man in 1700 that a device would be invented whereby a man three thousand miles away from a speaker could hear his words sooner

Copyright 1927 by E.P. INC.


WALITT
29

than a man sitting three hundred feet away in the auditorium. The man, even though he were an enlightened and intelligent individual, would declare that the thing was a scientific absurdity, a paradox. 'Sound,' he would say, 'travels a mile in five seconds; therefore the nearer person would hear the voice first, even though a marvelous device did make the sounds audible to a man three thousand miles away.' A story involving such a device would be inconsistent to his point of view. And yet we know that radio waves travel so quickly that a man listening in with his heterodyne, actually does hear the speaker's words a minute fraction of a second before the person in the rear of the auditorium. What is 'scientifically inconsistent' in one generation can often be fully and logically explained by the science of the next. Therefore I believe that a time-machine may, and probably will, be invented at some future time. When science knows more, perhaps many of our inconsistencies can be explained away."

There was silence for a minute after Sherman had finished this exposition of his ideas. Then Raymond Cannes, who had not spoken previously, said slowly, addressing us all, "You are right, Mr. Sherman. The time-wave, that mysterious force which travels through time, the fourth dimension, will be discovered in the year 2806, just after the second terrible Martio-Tellurian War. It will be discovered by a great scientist who will be called Dwar Smit, the twenty-ninth century equivalent of Edward Smith, and it will be called the NN-4 wave, for a reason which I do not understand."

Cannes Begins His Story

A few words of explanation are necessary before I transcribe the story told by Raymond Cannes.

A certain exclusive Philadelphia club, which shall here be quite nameless, is the regular Sunday night rendezvous of a small group of the more serious-minded social aristocrats of the city. They meet in a corner of the lounge-room and discuss, often with some heat, any political, economic, social, literary, or scientific question that happens to come up. Their informal meetings are usually quite interesting, if you happen to be the sort of person who could enjoy an impromptu debate.

There were eight present that evening, but Preston and Sherman had been doing most of the talking. Sherman had brought me as a guest, for I am not a member of the club, and probably never shall be. I think Cannes was also a guest. Both Sherman and Preston told me afterward that they had never seen him before.

I shall repeat his story as accurately as possible, as I remember it, and I shall try to keep my own personal ideas and prejudices entirely out of the picture.

Cannes' opening and extraordinary statement was received first with silence and then with laughter. Preston asked him what he was talking about, and Cannes con-

tinued with an even more astounding remark.

"Gentlemen," he said. "I have cheated death by means of the fourth dimension. It is quite unusual that your conversation tonight should happen to be about the idea of traveling through time. I have done that very thing, and I just returned to the present at three o'clock this afternoon. There are many things about my experience that I fail to understand, just as a man in King Arthur's time would fail to understand an airplane, even if he could have ridden in one. As Mr. Sherman has pointed out, however, if I could understand twenty-ninth century science the seeming absurdities and impossibilities would explain themselves to me.

"I'll tell you the story if you want me to, and if you'll agree to refrain from making interruptions or wisecracks when you discover an apparent paradox or two. It is a matter of the utmost unimportance to me whether you believe it or not. I can't prove it. I destroyed the supporting evidence myself, for a very good reason. I doubt if I can make it convincing, but perhaps it will entertain you, and I think Mr. Preston will find it different from the 'formula' for time-traveling fiction, even though there is a pretty girl in it. My anachronistic love affair, however, was far from successful, ashamed though I am to admit it.

"About six months ago, Dr. Endicott Hawkinson called me on the phone and asked me to come over to his laboratory. Of course I went, for Hawkinson and I had been college chums, and I hadn't seen him for several months. You gentlemen remember perhaps the mysterious fire that destroyed the laboratory and killed him late last summer? His phone call summoned me thirty-three days before the fire occurred.

"He met me at the door. 'Cannes,' he said, 'what kind of an infernal hoax are you trying to put over on me now?' I didn't understand what he meant, and said as much. He was obviously puzzled.

" 'Didn't you write this?' he asked, showing me a sheaf of thirty pages of pale blue-tinted paper, closely written in longhand. 'I'd recognize that angular backhand script of yours any place,' he declared.

"I Glanced through the manuscript. It was absolutely incomprehensible to me, as more than half of it consisted of intricate calculations, mathematical formulas, and equations that seemed to consist largely of Greek letters. The last ten pages contained some sort of complicated instructions, apparently for the manufacture of a large electrical machine. My college course had been academic and classical, while Endicott had specialized in mathematical physics and electricity. The stuff was as meaningless to me, as Morse code would be to a Japanese goldfish. I knew I had not written it, but the handwriting was undoubtedly a very good imitation of mine, I thought, particularly after I had closely examined the first line on the first page, which said 'To Dr. Endicott Hawkinson', and was written precisely as I would have done it. Furthermore, it was underlined

twice, a little habit of mine. I tell you, gentlemen, I was puzzled. What motive could anyone have had for writing a sheaf of higher math, copying my handwriting in such a manner, and leaving the manuscript in the doctor's mailbox? When I eventually did discover the motive it was unusual indeed. More about that, later.

" 'What,' I inquired, 'is the meaning of this stuff?'

"His reply surprised and amused me. At that time, of course, I thought it was quite impossible to travel through time. But his sincerity impressed me as he told me that the manuscript apparently proved the existence of a fourth dimension, and furthermore showed the possibility of constructing a machine for projecting a body through the fourth dimension in much the same manner as we can throw a baseball through space.

" 'I have checked these computations twice,' he told me. 'If it is some fraud, some joke, some deception, there must be a fallacy in it somewhere. But I can find none. And you did not write it. After all, you couldn't have written it, Cannes! I'm almost convinced that it's genuine, after checking it twice, and you never went further than elementary algebra. But, then, who *could* have done it? If it's genuine it's the work of a genius. Why, then, would the genius give it to me? And that similarity of handwriting is remarkable——'

"He was wandering off into a maze of speculations, and seemed to forget me entirely. I left a few minutes later and heard nothing more from him until slightly more than a month had passed. He again called me on the phone with the startling news that he had been successful in constructing the four-dimensional machine. He asked me to come over immediately. I went.

"I am extremely foolish and impulsive by temperament, given to acting hastily without thinking. And so it is that I accepted the wild suggestion of Endicott Hawkinson to take a trip through time. But he didn't make the suggestion until he had demonstrated the machine to me.

"An odd-looking thing, that machine! That is, as much as I could see of it. Most of it was inside an enormous cabinet having a bakelite panel upon which were numerous switches and three dials. Eight heavy cables led from the bottom of the machine to the eight corners of a heavy cubical metallic box supported by four large vitreous insulators. The box was large enough to hold three men, and had a small trap-door in the top.

"I also noticed that Endicott had had a special power line installed by the electric lighting company.

"Endicott placed a large stone in the metal box and closed the trap-door. Then he threw five switches, halted to inspect something on the panel, and threw another switch, meanwhile watching his wrist watch. At the end of ten seconds he opened the switch again and told me to try to lift up the trap-door.

"Though he had not locked it, and it had been easily manageable a few minutes ago, all of my strength was now insufficient to lift it an inch.

Hawkinson picked up an enormous crowbar and helped me pry the lid off. As soon as we had lifted it a trifle I was startled by a loud concussion and it came off easily. It was so hard to lift because there was an absolute vacuum within. After the air had rushed in, the lid was easily removable.

"I looked in. The undersized boulder had completely disappeared. I could see absolutely no explanation of the fact. The insulators supported the box a foot or more from the floor. The thirty-pound rock could not have passed through any one of the six sides of the hollow cube without becoming plainly visable to me. I was satisfied that I had not been deceived. The explanation leaped to my brain.

" 'It escaped through the fourth dimension?' I exploded incredulously.

" 'Precisely. It didn't escape in any of the other three did it? A being living and thinking in only two dimensions could be imprisoned in a two-dimensional square. He couldn't escape without passing through one of its sides. But if he should discover the third dimension, if he should be able to travel in three-dimensional space, he could leave his plane and escape from his prison, and eventually return to his two-dimensional plane again, but outside the square. The analogy is simple. A being living in and knowing of only three dimensions, such as a man, can be imprisoned in a three-dimensional room. He can't escape without passing through one of its sides. But if he could travel into four-dimensional space, that is, into time-space, no prison or dungeon in the world could hold him. He could later return to his own three-dimensional "plane," but outside the prison. You understand that? It's some of the most elementary four-dimensional geometry.'

" 'I was under the impression,' I replied, 'that four-dimensional geometry was entirely a theoretical, hypothetical science. You speak as if hyperspace and the fourth dimension had a concrete existence!'

" 'After what you have seen, Cannes, do you doubt that? Certainly the fourth dimension exists. Einstein and others have proven that it is time. But we're three-dimensional beings, my friend. Our senses, our experience, our ideas, do not recognize duration as a dimension in the same manner as we think of length, width, and height. Time, to us, seems to be something else.'

"The doctor continued to speak in like manner for some time. To save time, gentlemen, I am going to omit the rest of his lecture. He fully convinced me that his machine radically changed electricity in some way that I cannot understand, for I do not know the difference between a transformer and a kilowatt-hour. I believe that, among other things, the frequency of the current was enormously increased, but I'm not sure of even that detail.

"Yes, gentlemen, I expected you to smile. It would be more convincing if I could be specific, wouldn't it? Never mind. Truth, you know, doth often wear the mask of fiction. If you think you are hearing lies, the worst is yet to come. And yet my story is cold and unadorned truth."

Cannes was perfectly at ease. What we thought of his narrative was nothing to him. He smoked a minute in silence before he resumed, and he was honored with complete and undivided attention.

"This altered current, gentlemen, had immensely different properties from those of electricity; and, by using the marvelous machine which he had constructed according to the specifications and directions in the pale blue manuscript, written in—well—in my handwriting, that had been mysteriously placed in his mail box, Dr. Hawkinson was able to send objects into the future by employing this current, which he called the time-wave.

"So far, we had not discovered a single trace of the writer of the paper. I discovered him later, one thousand and two years later, to be exact. For I went into the future.

"I don't know yet just what was the fascination that urged me to do such a thing. I said that I am impulsive, hot-headed, foolishly short-sighted, and impetuous. I had no relatives to keep me home, and I longed for the strange adventure. I never thought about getting back. And Hawkinson wanted knowledge of the future. He said that certain statements in the manuscript had convinced him that living beings were not harmed by the process, and that he hoped I would eventually find a means to return to him, though there was positively nothing in the manuscript to indicate that the process could be reversed. It concerned itself only with entering future time.

"So, late that same night, before my impulsive decision had had a chance to cool, I climbed into the box, heavily clothed, and with my head incased in an unbreakable transparent globe. An oxygen generator strapped on my back and connected by a tube to the headgear provided me with an exhilarating atmosphere, though I don't understand the precise reason for the outfit being necessary.

"I saw Hawkinson's face as he closed the lid, and suddenly I wanted to turn back. And I'm sure he did, too. But we went through with it. Death came to him soon after, but because of that experiment I have cheated death.

"I was in the box only about ten seconds before I had a sensation as if I were rising with ever-increasing speed through a perfectly black void. I could see nothing, I was very cold, and the sensation of motion became greater and greater. Then something clicked three times, and my journey was ended.

"I did not learn, until I returned to the present at three o'clock this very afternoon, that Hawkinson had been killed. Some faulty insulation somewhere had permitted a short circuit between his house-lighting system and his special line. The frame house and laboratory took fire and burned, and somehow he was trapped in it. This must have happened only an hour or so after I left him, according to what I learned a few hours ago by telephonic conversation with his family. At least, the accident did not occur after the doctor had finished sending me into the future, for I arrived all right.

"As soon as I heard the three

clicks, I perceived that I was standing erect in a room with brilliant crimson walls. There were windows at one side that permitted sunlight to enter. And there were two men present, each seated in a comfortable chair. One would think that my sudden appearance would cause some surprise or astonishment to men of the future. But the individual at my left, in a most commonplace tone of voice, merely made a remark to the other that to me was nothing less than astounding.

" 'Here's another anachronism,' he said. 'They're getting to be a damned nuisance.'

In the Year 2930

I removed the transparent globe from my head and addressed the nearer man, inquiring where I was in space and time.

" 'You are in district 700254 of New York, and the date is August 2, 2930.' The accent of the man was peculiarly nasal, but his words were clearly understandable, although I had traveled one thousand and two years and some odd months, weeks, days, hours, minutes, and seconds into the future. In those thousand years the English language had altered less than it had in the two hundred years preceding. This, I later learned, was due to the adoption of printing to an ever-increasing extent, which had served to fix or standardize the language. Of course, an enormous number of words had become obsolete and multitudes more had been coined. But I never had any great difficulty in conversing with my friends in that distant era.

"Before I had much time to marvel that I had passed through ten centuries in what had seemed like so many seconds the man of the future was addressing me again.

" 'It is requested,' said he, 'that all persons visiting this era from the past be sent to Dwar Bonn's laboratories in Australia. The government of the world has employed Bonn to compile as accurate a history as possible of the last two hundred years—the period since the second Martio-Tellurian War. You will doubtless be able to give him some useful information about the year you left to come here, and the period previous to that.'

"My head was in a whirl. 'A laboratory,' I interposed, 'for writing a history?'

" 'The history,' he answered, 'is only one of the thousands of things Bonn and his assistants are taking care of. Not one laboratory. Three hundred. Bonn has been the world's greatest scientist since the death of Dwar Smit. You know of *him*, of course?'

" 'No.'

" 'How could you have come here, employing his invention, without knowing of him?' Unveiled suspicion was in the eyes and the tone of my questioner. He pressed a button or switch that I didn't see very plainly, for it was behind him on the top of a table. I must have lost consciousness, for the next thing I remember is sitting upright and finding myself to be the sole occupant of a small airplane, high above the earth, rushing through space without visible control at a rate of exactly 1000 kilometers,

about 621 miles, an hour, if the speed indicator in front of my face was correct.

"I could not see the earth, for a heavy uniform layer of clouds was below me. I later learned that they were completely under the control of man, and that the agricultural region over which I was passing was receiving its daily four o'clock rain.

"I marveled that I felt no motion. Only by looking out through the thick glass windows at either side of my enclosed compartment at the rushing clouds below could I realize that I was moving. I reasoned that I must be going in an absolutely straight line, for I knew that in 1928, when racing aviators made turns at more than three hundred miles an hour they lost consciousness for a moment.

"But I found out in a few minutes that there was something wrong with my conclusions. With a suddenness that startled me, the clouds were passed, and I was high above an ocean. Far off to my left, traveling at great speed, and in a direction that showed its course would intersect mine, was approaching a colossal monotriplane, three streamlined wings behind one another supporting a fuselage larger than the Leviathan. I found out later that seventy or eighty thousand ton air freighters and passenger planes were common. I experienced a very real fear in the few seconds it took for that flying city to approach the tiny plane in which I was, to all intents and purposes, a prisoner.

"When it seemed that a collision was inevitable, something clicked on the instrument board before me, and my plane soared over the other without decreasing speed in the slightest. And only by my eyes did I know that I was moving. Somehow, in the planes of the thirtieth century, inertia and centrifugal force had been nullified so that I could turn sharp corners at six hundred miles an hour and not know it if I had my eyes shut!

Almost three hours later the little plane, having successfully dodged automatically several dozen others of all sizes and types, glided down to the roofdrome of a skyscraper something more than half a mile high. The door of the plane snapped open, and as I stepped out I was greeted by no less a person than Dwar Bonn, greatest living scientist of the era. I had been shipped to his Australia headquarters by automatic airplane delivery service.

"Bonn introduced himself, took me to an elevator, closed the door, and five seconds later opened it again some hundred and fifty stories lower in the building. I did not feel the descent, nor even the jerk that must have taken place when we stopped. Bonn conducted me to a room whose walls were a brilliant scarlet. Why they were so, I haven't the slightest idea. When we had been comfortably seated, he explained:

" 'Your appearance, Mr. Cannes, has given us an enormous amount of valuable and interesting information about the twentieth century. You were rather foolishly suspected to be a dangerous character by a couple of business men' (his tone held a marked contempt) 'whom you interrupted in the midst of an important

business conference. The world has lately been excited by the announcement of an Egyptian scientist that a method of producing true invisibility has been discovered. The men, seeing that you were not wearing the time-traveling apparatus that is usually worn by people coming from the past, and hearing your statement that you did not know of Dwar Smit, discoverer of the NN-4 wave, rather stupidly jumped to the conclusion that you were perhaps just an invisible intruder who had been spying on their affairs, so they rendered you unconscious by using a very common hypnotic apparatus that may be purchased anywhere, although it is not generally used for such purposes.

" 'A few minutes' reflection and an examination of you showed them their mistake, so they got in touch with my New York representatives. The latter hooked you up to another hypnotic machine, and your brain, if I may use the simile, was turned upside down like a bag of information. So you have already disclosed to me everything you know about your civilization and your former life.

" 'You have been a particularly interesting case, and you have corrected many erroneous ideas we have held about your time. You are the first man to come to us from a time previous to the year 2806, when Dwar Smit discovered the NN-4 wave. You traveled through time before the system of time-traveling was ever invented. Your friend found a mysterious manuscript, we discovered when we read your brain. This manuscript gave specific directions for the construction of a machine identical with the earliest crude one made in 2806 by Dwar Smit.

" 'There is only one explanation. Someone, sometime later than 2806, copied Dwar Smit's earliest calculations and directions, *traveled back through time*, and left them in your friend's mail box. Dr. Hawkinson could therefore copy a machine that was not really made until centuries after his death! It sounds almost incredible at first. It's what *you* might call a paradox.

" 'But understand this, Cannes. Although he tried all his long life, Dwar Smit did not invent a machine for *traveling back through time*. He was never able to do anything but send people and objects into the future. And most of today's scientific minds believe that traveling into the past, traveling negatively through the fourth dimension, is impossible. I have not held that belief, for many reasons, the most understandable of which to you is the fact that one can travel in either direction through any of the other three dimensions.

" 'Three days ago I completed a machine that I believe will enable me to send objects back through time. When I learned of your arrival I was greatly excited, for in a way you are evidence that my machine will work. Let me explain.

" 'The manuscript Dr. Hawkinson found was in your handwriting. You are now existing in the year 2930, more than a hundred years since Smit invented the machine for utilizing the NN-4 wave. What is to prevent you from copying his work, traveling back through time to the

night before Hawkinson found the manuscript, and placing it in his mail box? The fact that the manuscript was placed there shows that you will be successful in placing it there!'

"'I doubt if I could copy such calculations accurately. I might make a mistake.'

"'Don't let that worry you. I have a clerical machine in the next room that can do that. It is often used to make translations and for the writing of certain complex hieroscript codes I use for private records. The codes are undecipherable except by machine and cannot be written by the ordinary dictaphonoprinter, which anyway is not equipped with the mathematical symbols necessary. This clerical machine of mine will examine, photoelectrically, any small sample of your handwriting and, in somewhat the same way as it translates messages from one language to another, it will copy the calculations and specifications in Smit's book, putting them on paper in a very close approximation of your handwriting.

"'Since Smit's invention of his time machine it has been radically changed and improved and its size decreased. I plan to strap one of these on your back, tell you how to use it, send you and it into the past to the night before your friend found the manuscript so you can place it there for him to find, and then you will return to me by using the improved and compact machine on your back. Please give me a sample of your handwriting.'

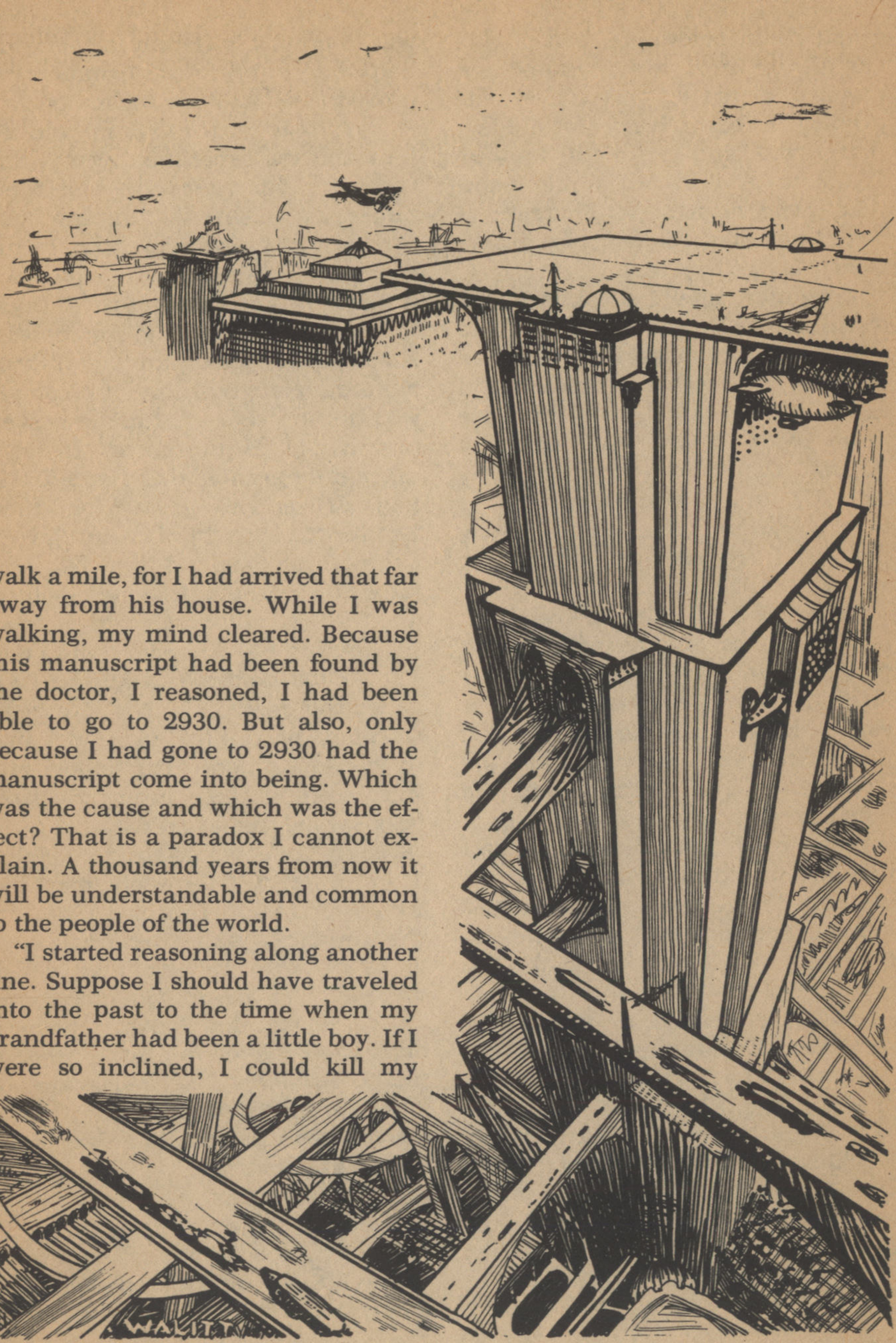
"My mind was in confusion but I did as he asked. He took a volume from a concealed bookcase, went into the next room, and closed the door, leaving me wondering if I were dreaming. By the time I had almost convinced myself that I was not, by pinching the back of my neck, Bonn returned with a sheaf of blue-tinted pages. I started.

"'Here is the manuscript, Cannes. It looks familiar, eh? No doubt it seems paradoxical to you that your friend used it a thousand years before it was made. You had better put his name on it so he'll know whom it's for.'

"Still mentally dazed, I took the manuscript and automatically wrote 'To Dr. Endicott Hawkinson.' Then I started again, violently. Unconsciously, without thinking about the matter at all, I had underlined those four words twice. The manuscript in my hand was the identical one that was to provide the means for sending me into the future. But I was already in the future! It occurred to me that I had emphatically denied having anything at all to do with the placing of the manuscript in the mail box.

"You cannot understand how mixed up all my mental faculties were. My knowledge was a thousand years behind the times, and I could not begin to understand the things I saw happen.

"Gentlemen, I am going to omit details. It is becoming late and there is another part of this story I want to tell. Suffice it to say that I was transported into the past farther than I had come into the future! I placed the manuscript in the doctor's mail box. But before I did this I had to



walk a mile, for I had arrived that far away from his house. While I was walking, my mind cleared. Because this manuscript had been found by the doctor, I reasoned, I had been able to go to 2930. But also, only because I had gone to 2930 had the manuscript come into being. Which was the cause and which was the effect? That is a paradox I cannot explain. A thousand years from now it will be understandable and common to the people of the world.

"I started reasoning along another line. Suppose I should have traveled into the past to the time when my grandfather had been a little boy. If I were so inclined, I could kill my

grandfather before he had had a chance to meet my grandmother, thereby depriving myself of the privilege of being born! But the fact that I was present to kill my unfortunate grandfather would show that I *had* been born. Therefore, I could not have killed my grandfather. It was hopeless.

"The most intelligent man in the world in 1428 could have proven to his entire satisfaction that such a thing as radio was scientifically and logically impossible; yet we have radio today. I actually convinced myself that time-traveling was logically and scientifically nothing but the utterest nonsensical paradox; yet I delivered the manuscript as per Bonn's instructions.

"Then, still following instructions, I returned to the exact point at which I had arrived from the year 2930. As I returned I wondered what would have happened if I had thrown the manuscript into the river, instead of putting it in the mail box. Hawkinson, next morning, would never have found it, and therefore could never have sent me into the future. But unless he had found it and sent me into the future, I could never have had the manuscript to throw into the river. However, I seemed to think that throwing the manuscript into the river would be deliberately cheating fate. So I had delivered it.

"Later, when my life was at stake, I deliberately did cheat fate. That's why I'm here now. My death was scheduled for yesterday. I'll explain that later on.

"I stood near the river, ready to follow Bonn's final instructions. I was to press a button in the belt that helped to support the complex improved time-machine on my back. I was ready to return to Bonn and tell him that the experiment was a success, that his invention had functioned as well in sending me back through the fourth dimension as the other had in sending me into the future. I was ready to return to Dwar Bonn. But suddenly I hesitated. Why should I go back into the future? Nothing compelled me to comply with Bonn's request. I had not even promised him to return. He had taken it for granted that I would. If it had not been for that aversion I then had for the thought of cheating fate, I think that then and there, I would have taken off the portable machine and thrown it into the river.

"Another thought occurred to me. The night before Hawkinson had called me on the phone I had been sleeping peacefully in my Lansdowne apartment. Undoubtedly I was sleeping there peacefully that very second, for I had traveled back through time to that same night. Then, if I should throw the machine into the river, there was nothing in the world to stop me from going over to Lansdowne and waking myself up. The idea fascinated me. It occurred to me that I would have a hard time convincing myself that I was I. Suddenly I started again. *It was a scientific impossibility for a man to be in two places at the same time*. But I was.

"Another paradox. I then determined that I should return to 2930 and have Dwar Bonn explain things to me. So I pressed the button in my belt. The 7.6 grams of 'solid

electricity' in the generator of the outfit on my back was changed from matter into energy, producing a powerful current, which was transformed into what Bonn always called the NN-4 wave by the apparatus on my back, and I rose through the fourth dimension once more. I found Bonn smiling as I suddenly appeared in the laboratory, hardly a foot from the point from which I had started.

" 'It is a success,' he said. 'You've been gone thirteen seconds!'

"A short while later I requested him to explain to me the seeming paradoxes connected with time-traveling. And he did! He explained them fully. He explained them logically and painstakingly. He explained them as simply as he could, but the cold fact remained that my brain was a thousand years behind his. (I defy any scientist of today to write an explanation of the talking movies that would be understandable to a man living in the tenth century.) Bonn finally decided to stop trying. He told me that if I decided to remain in that era of time, he would arrange for me to be hypnotically educated by machines built for that purpose, though my brain would probably not be capable even then of comprehending the abstruse science behind that seeming paradox. For a long time I puzzled over myself and the hypothetical murder of my innocent grandfather, but it remained, and remains yet, an endless circle to me.

"There was another endless circle connected with my experience in the years to come, but it was perhaps a trifle more easily understandable. I met a girl and loved her with a love that was never requited. The more I loved her the more I wanted to be with her, and the more I was with her the more I loved her. But she never thought of me as anything more than a scientific curiosity, one of many living anachronisms. Traveling into the future had become almost common after Smit's invention of the time-machine in 2806. Yet it was because of that girl that I cheated the grim reaper in 2930, and then gypped him again in 1928. I really have no right to be alive now.

The Invisible Spy

"She was Greta Bonn, the scientist's only child, slender, brown-eyed, adorable.

"Gentlemen, I feel like a particularly silly fool to sit here and tell you that I fell hopelessly in love with a girl who doesn't exist, and won't exist until ten long centuries have passed. Perhaps one should not speak of the affairs of one's heart, even if one is heartbroken. No, I'm not joking with you——

"Dwar Bonn had invited me to be his guest, for in a small way I had helped him to realize one of his life's ambitions, that of sending objects into the past. For the first month or so after my arrival I spent all of my time learning about and trying to comprehend the highly involved and complicated civilization of the period after the second great interplanetary war. And I learned something of the history of the world, something about the unspeakable horror of those two wars, of the time when three-

quarters of the world's population were killed in one day——

"Greta Bonn instructed me in many things, and I was happy to have her as my tutor. Perhaps the happiest month of my life passed in that great laboratory in Australia, and slowly I awoke to the realization that I, an anachronism by a thousand years, was madly in love with the daughter of him who had earned the title of world's greatest scientist.

"But my month passed, and in a few short hours occurred that chain of startling events that resulted in my leaving the future forever. This last adventure is fresh in my memory, for it seems only this morning that it happened. And I would give anything to know what happened after I left that era. Anything. But I shall never know.

"Greta was enormously excited when she greeted me in the early evening of September 28,2930. A little more than fifteen hours ago, that was. Or it seems so to me.

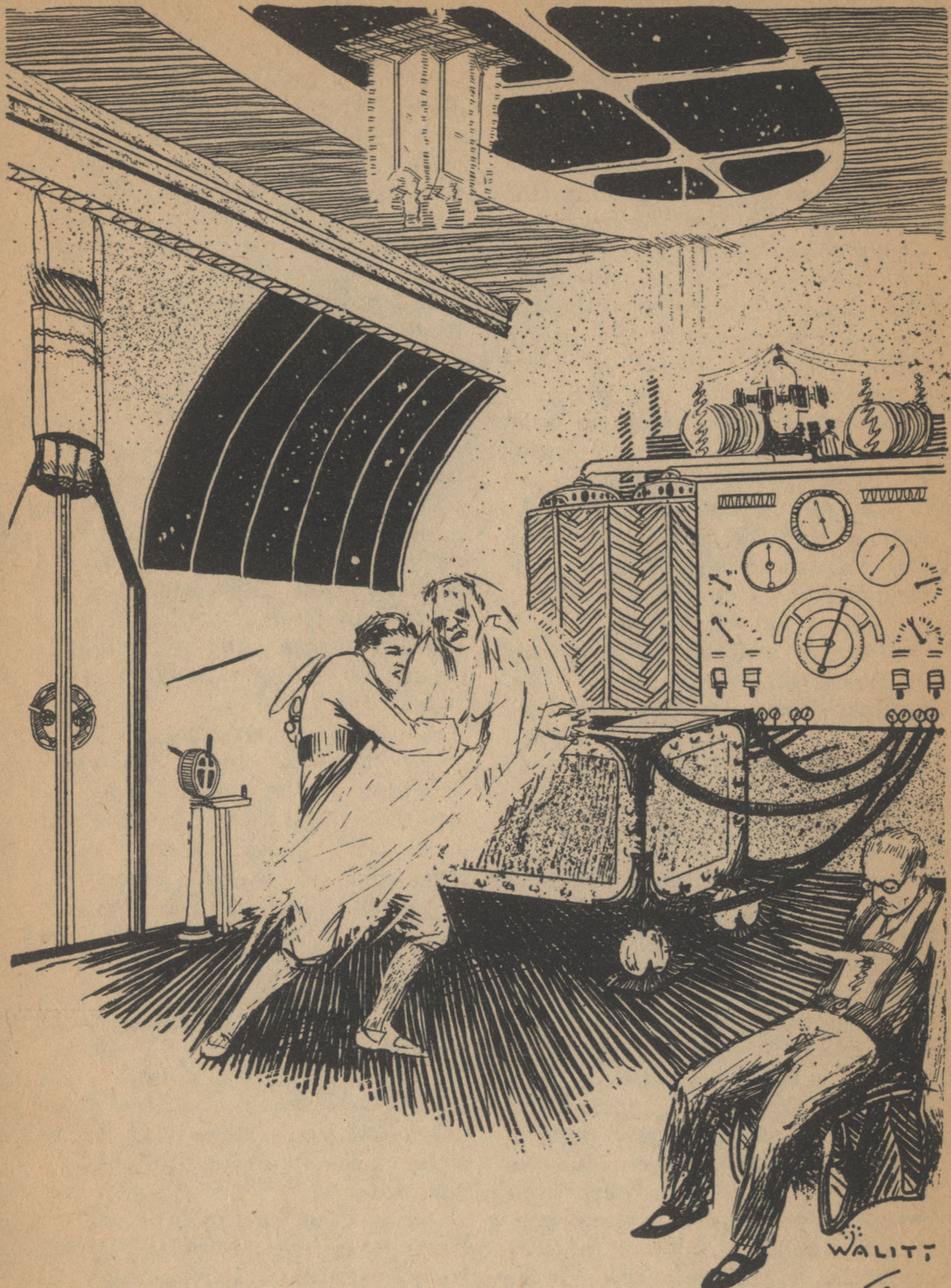
"She had found relatives of mine, descendants of my brother, who were living in California, and had talked to them by radio. And in old records the family possessed, my birth and death were listed, together with the notation that I had fought in the First World War and had been wounded. Yet it was a terrible blow to me to find out that my old and dignified family name had been phonetically altered to Canz.

"But the most interesting thing to me was the date and the manner of my death. In the family records no mention was made of my traveling through the fourth dimension. I have never informed my relatives about it. But it was stated that I had been killed by a motor truck on October 7, 1928.

"Before I could grasp the full significance of this fact Dwar Bonn appeared and told Greta and me that he was going to New York on the new monster plane *Patrician*, and invited us to accompany him. I accepted, of course, for I was eager to see the enormous metropolis, and Greta went along because she had some girl friends in the city and was getting tired of visiting them by television only.

"A few hours later the three of us were sitting in our private parlor aboard the *Patrician*. Bonn told me that in the past month he had been improving and reducing the size of his newest invention, so that it took up only a trifle more space than did the portable machine of Dwar Smit's that I had used. After he had mastered the principle, he said, it was easy for him to improve the details and eliminate unnecessary bulk and weight, in much the same manner as Dwar Smit's machine had been gradually improved. He was taking this new machine to New York for a private demonstration to some of his personal friends and colleagues.

"In some manner or other the discussion turned to atoms, and Bonn tried vainly for a while to explain to me the latest theory about the structure of the universe. In the early twentieth century, he stated, men believed that everything was made from some ninety-two or so different kinds of atoms, which were supposedly indivisible. Then later it


WALITT
29.

was learned that the entire universe, including the atoms, was made up of only three different things, the electron, the proton, and the photon, or light-corpuscle. For you know, gentlemen, that even today it is recognized that there are facts that the wave-theory of light cannot explain. Bonn told me that in some of his researches and experiments concerning transmutation (the simple process of adding or removing a few electrons and protons from one kind of atom to make of it another variety), he had found evidence that had convinced him that the electron, the proton, and the photon were different manifestations of one and the same thing——

"Human nature had not altered very much. The discussion was old stuff to Greta, and it visibly bored her. She rose and went out on the deck, and I soon excused myself and followed her, for I could grasp very little of what Bonn was saying. I had been under the impression that protons and electrons were positive and negative charges of electricity. And the photon was a new one to me. Besides, I was much more fascinated by Greta than by the speculative physics of the thirtieth century A. D.

"I found Greta at the extreme front of the 3000-foot fuselage, on the topmost deck, which was covered over by a transparent, unbreakable, glass-like metal or alloy of some kind, hard as steel. She was standing in the gentle breeze that emerged from one of the great ventilators, apparently lost in contemplation of the stars. Through the transparent roof I could hear faintly the hundred high-pitched whistles made by the air as the *Patrician* hurtled through it more than twelve miles a minute.

"Her hair was like spun gold in the moonlight. My love for her came to the surface, my impulsive, temperamental nature asserted itself once more. I took her in my arms and kissed her, but there was no answer in her lips.

"And then the works started. I truly believe, if she had had a firearm of any kind, she would have gladly shot me dead. Never had I beheld anyone so mad, so outraged. Having no suitable deadly weapon at hand, she attacked me with her fists. I stood still and took all she gave. I couldn't run away, could I? I couldn't strike her, could I? And I couldn't reason with her. She was doing all of the talking. I won't repeat what she said. I gathered from it that she was disgusted with me, that she utterly hated, loathed, and despised me; that she would be greatly pleased if she never saw me again. For it is evident to me that a kiss, in 2930, was a much more significant thing than it is now, and Greta's indignation knew no bounds. None whatsoever.

"While she was wildly attacking me, her fist happened to strike one of the two metal disks, six inches in diameter and an inch thick, that were attached to the shoulders of the coat I had been given to wear, and in some way snapped it off the rod that supported it an inch above my shoulder. The blow must have hurt her hand cruelly. The metal disk fell into the ventilator. I presume it went out at the other end and fell to the earth. I don't know.

"I had noticed that everyone I had seen on the plane, including Bonn and Greta, had two of these disks attached to his or her shoulders, but I had not given the matter any thought. I was used to seeing things I couldn't understand.

"When the girl's fit of temper was finally over she turned and walked stiffly away. I stayed where I was and looked at the orange moon, meanwhile bitterly cursing my luck. When I had cooled down a little, I realized that the only thing I could do was to go to her and to her father, apologize for my actions, and explain that I had intended no harm, asking their forgiveness on the ground that I was still unfamiliar with the customs of the time, and had foolishly let my emotions get the better of me.

"When I re-entered the room in which I had left Dwar Bonn, he was sitting upright in his chair, dead. Through his heart, projecting ten inches from both his back and his chest, was a heavy steel needle, pointed at both ends, a perfectly hellish weapon.

"I thought I heard a noise in the corner of the room but I saw nothing there except the large chest in which was Bonn's latest and greatest invention, the machine for traveling back through the fourth dimension. Then I was positive I heard a slight noise in that corner of the room. I took a couple of steps forward.

"Something shrieked past my ear. I heard a thud behind me and turned involuntarily. Protruding from the metal wall was another long metal needle, quivering. Suddenly I recalled the words of Dwar Bonn. 'The world has lately been excited by the announcement of an Egyptian scientist that a method for producing true invisibility has been discovered,' he had told me. Instinctively I acted. I hurled myself toward the chest in the corner.

"I could feel my arms encircle the body of a man, but could see nothing. He who struggled in my arms was completely covered by a soft flexible gelatinous garment that in some manner caused light to pass around him as water flows around a submarine, as air flows around the streamlined fuselage of a plane. It was not transparency, or partial invisibility, or an optical illusion that I had to deal with. I saw around the killer of Bonn, but my eye could perceive no evidence of his existence.

"I expected every second to feel a long slender needle forced into my body as I held the unseen fighter, but he was apparently helpless as long as I held him tightly, for he stopped struggling after a few moments. Probably he had used the only two of the needles he possessed. It is still a mystery to me how he could shoot them with such force, for I never had a chance to examine the device that fell at my feet as I seized the man. I think it was a pistol of some kind for firing those odd, impractical-looking messengers of death.

"When he stopped struggling, I made a desperate and unexpectedly successful attempt to rip his unseen covering from him. I jerked at it, tearing it, which apparently rendered it useless, for the slight but well-formed body of the man became

visible, still covered by the torn and now visible and transparent membrane, which was connected by dozens of tiny wires to a box strapped on his back.

"I expected no great difficulty in dealing with him after he had become visible, for I had superior strength and a forty-pound advantage in weight. It was my intention to summon one of the plane's officers and deliver the murderer into his custody. Then I looked at the eyes of my prisoner, and astonishment, fear, and horror overcame me. The eyes were a deep red-flecked purple, and without pupils. I was holding the body of a man, but in it was a Martian brain.

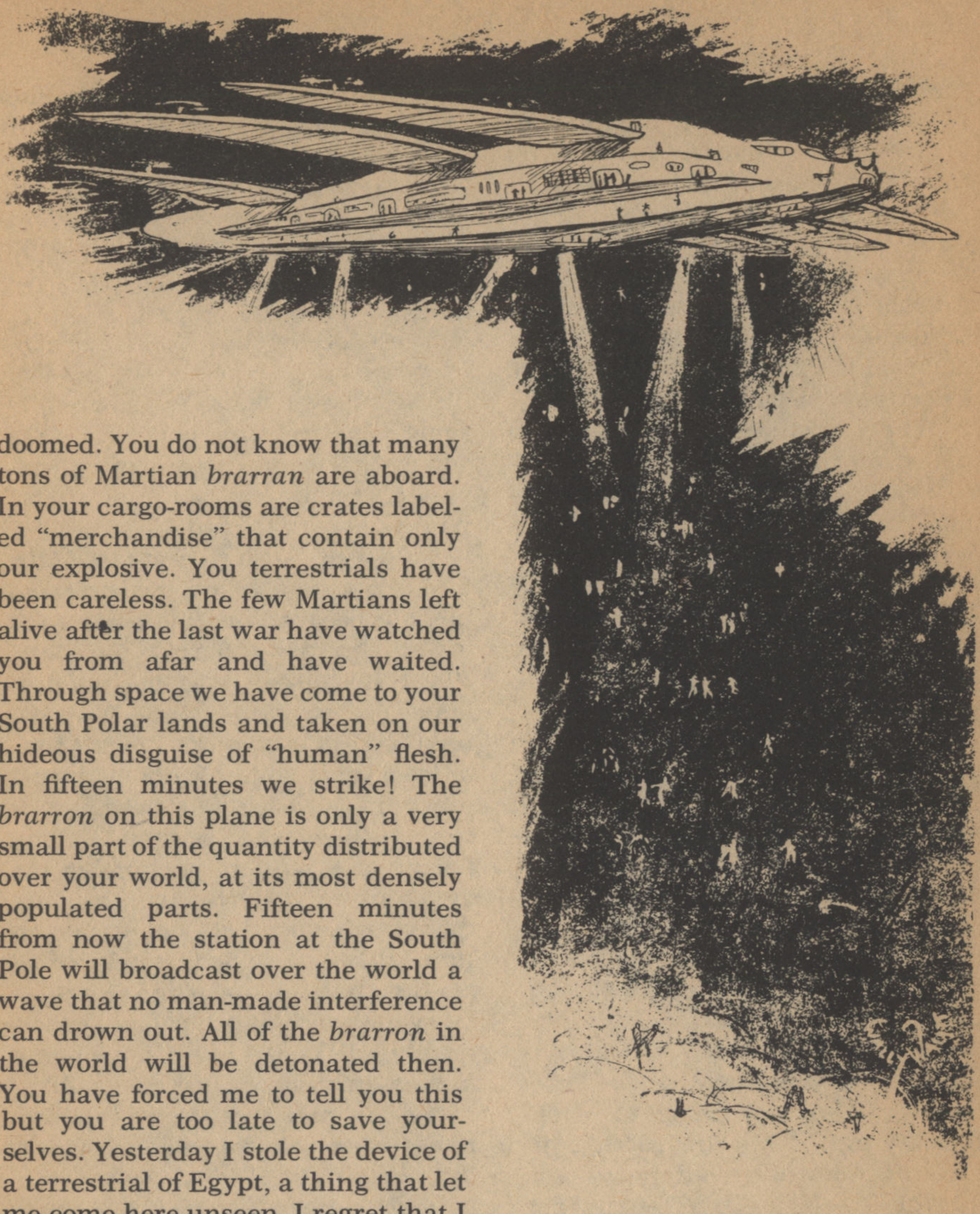
"In that split second of terror I remembered some facts Greta had told me about the Martians. Unable to live long on the earth because of the superior gravity that soon wrecked their fragile bodies, the Martian spies that had prepared the way for the second Martio-Tellurian War, little more than a century previous, had killed men by suffocation, and by means of their marvelous surgery had transferred their own brains into the human bodies before the latter had become cold or rigid. Then they had revived the unharmed bodies. But the eyes had troubled them. Of all the organs of the body they were the only ones that did not function for the Martian brain, so Martian eyes had been transferred, too. And the unsuspected spies, their eyes concealed by colored glasses, had gained the necessary information, made plans, and had laid the foundation for that war that so nearly had eliminated mankind.

"Now, for the first time in a hundred years, another Martian spy was on the earth. I was startled by the revelation. A sudden fear came to me that perhaps the Martian was hypnotizing me now, that soon I would be under his power. But that did not come to pass. Though tremendously advanced in some lines of science, the Martians had practically neglected the possibilities of the psychological sciences. My will was stronger than my prisoner's.

"But he took advantage of my moment of surprised terror and broke away by a sudden effort. He rushed for the door, threw it open, and would have been gone, had he not collided with Greta Bonn. In that second I recaptured him. Greta saw the eyes, her slain father, the needle in the wall, and acted. She called the captain of the plane at once on the phone. The latter tuned his televisor on the room, took one rapid glance at the situation, and sent an armed officer with several men to our parlor immediately. They bound the Martian securely and then questioned him. He remained stolidly silent, unashamed hate in the flashing purplish eyes.

"Seeing that the Martian had not the slightest intention of saying a word, the officer employed a little hypnotic machine to force a confession, the same type of machine, I believe, that had rendered me unconscious in New York, and which had numerous other uses. This is what the Martian said:

" 'In three days not a terrestrial will remain alive. You have captured me, you may spread the news, but you will not escape. This plane is



doomed. You do not know that many tons of Martian *brarran* are aboard. In your cargo-rooms are crates labeled "merchandise" that contain only our explosive. You terrestrials have been careless. The few Martians left alive after the last war have watched you from afar and have waited. Through space we have come to your South Polar lands and taken on our hideous disguise of "human" flesh. In fifteen minutes we strike! The *brarron* on this plane is only a very small part of the quantity distributed over your world, at its most densely populated parts. Fifteen minutes from now the station at the South Pole will broadcast over the world a wave that no man-made interference can drown out. All of the *brarron* in the world will be detonated then. You have forced me to tell you this but you are too late to save yourselves. Yesterday I stole the device of a terrestrial of Egypt, a thing that let me come here unseen. I regret that I was not able to take this new invention of the dead man in the chair; it would have been useful to us. I would have escaped from this death-laden plane and taken both of these valuable things to my superior. But it does not matter much. In three days not a terrestrial will exist."

"The hypnotic machine disclosed that he was telling the truth about the cargo of explosive and the station at the South Pole. There were only fifteen minutes left in which to escape from the plane before it

would be blown to atoms. I remembered what I had heard about the Martian explosive *brarron*, its unearthly power of destruction. Men had never been able to analyze the samples that had fallen into their hands at the end of the previous war. All that was known was that it contained some compounds of nitrogen and that it could be detonated easily by certain etheric waves.

"There was not time enough to maneuver the enormous plane down to earth in the night in a place unfamiliar to the officers and not suited as a landing field. Like an enormous ocean liner the great plane was difficult to handle at its terminals. And I think that at that time it was over the Pacific Ocean, for the journey had lasted only two and one-half hours so far, and the plane could not yet have crossed the Pacific entirely at its rate of speed. However, so much artificial land had been produced in the preceding centuries that we may have been over dry land. But that is unimportant. It would have been highly foolish for the officers to have attempted a landing in the short time available. Nor could the great amount of cargo be removed. The captain of the *Patrician* did the best thing he could possibly have done. Instructing his radio operator to spread the news to all the world on the emergency wave, he gave orders for the hurtling plane to come to a full stop. It slowed and stopped motionless in the night air, supported by its ten large four-bladed helicopters. Then he gave the order to abandon the plane. All of the doors and windows were opened, and I was amazed to see hundreds upon hundreds of people calmly jumping off into the night. As I was wondering, I saw Greta beside me.

" 'Cannes,' she said, 'I broke your life-disks. Take mine, and jump.' Her tone was cold, impersonal. She began to unbutton the coat she was wearing. Then I comprehended the purpose of the two disks worn by everyone on the plane. In case of disaster they acted as parachutes, in some way extracting power from the supply that was always being broadcast for public use, and using that power to break the fall.

"I looked at the stern-faced girl beside me. She hated me, despised me, but because she had broken my disks, she was offering me hers. Why? Because it was her code of honor, of sportsmanship. With an unbroken pair of disks I could live, at least for a while. Without them I was sure of death. She held herself responsible for the destruction of my means of escape, so she offered me hers, urging me to take them as there were no others obtainable in time, although some were stored in another part of the plane. Because everyone was obliged by law to wear a pair of disks, the ones on the plane had not been stored very accessibly.

"She would not listen to my refusal. She told me, when I asked, that one pair of disks could not possibly support the two of us, that they would snap under a strain they were not designed for, and drop us to a quick death below. She told me she preferred to die on the plane where her father had been killed, and that she would not be so dishonorable as to leave me to my death after she had broken my disks. It was useless

for me to tell her that I had only myself to blame for my predicament, that her attack was justified, that I should not have kissed her. We wasted four precious minutes arguing.

"Then all my love and admiration for the stubborn brave, beautiful girl who would not save her life against her code of honor came surging up from my heart. I seized her, rebuttoned the coat she had almost removed to give to me, picked her up in my arms disregardful of her struggles, kissed her forehead, and threw her out into the night.

"The orange moon was still above. For a few seconds I saw her face as she sunk out of sight, and momentarily at least out of danger, too. For it was six minutes yet before the explosion would occur, and by that time she would have fallen far enough to be safe, unless some murderous piece of the wreckage should happen by the merest chance to strike her as she fell——

"I saw her face for a second or two, a second or two that are burnt into my memory, never to be erased. And yet I cannot interpret the expression I saw there. Certainly some of the anger was gone, some of the steely hardness. After all, in spite of her outraged feelings, had my kiss aroused something in her heart that responded to my great love for her? Had she insisted so strongly on my taking the disks partially because she did care a little? I'm afraid not. She was as cold as steel. Yet those last two seconds there was something in her face that—I wish to God I knew what it was.

"When she had fallen out of sight I began to think seriously about my own safety. I had no disks, I did not know where any were stored, and I couldn't search the whole gigantic plane in five minutes. Though I was, as far as I knew, the only person left aboard, the helicopters were still running smoothly, the plane was hovering motionless in the air. The controls had been locked. The plane would not move until the world-wide explosion took place. Five minutes!

"Then I remembered the machine in the chest. Bonn's machine for traveling back through time. Feverishly I rushed to the parlor where the three of us had been discussing atoms only a short hour previous. I opened the box and lifted out the machine, strapping it hastily on my back. It was very heavy and cumbersome, but that didn't bother me. I saw two dials on the belt that strapped around my waist which could be adjusted to indicate any latitude and longitude. I set them to about 39° 50′ north and 75° 10′ west, respectively, which was as close as I remembered the location of Philadelphia. Another set of dials could be arranged to indicate any day since 2000 B. C. up to 2930 A. D.

"But suddenly I recalled that according to the old family records I had been killed by a motor truck on October 7, 1928. I didn't want to return to the day before my death was scheduled and be killed the next day. I had puzzled so much about the seeming paradoxes of traveling through time that I had lost all repulsion to the idea of cheating fate. I decided that, no matter how impossible it seemed. I was deliberately going to cheat death.

Though I did not understand the science involved, Dwar Bonn had told me that such a thing was not at all impossible. So I set the dials for today, October the *eighth*, 1928. You gentlemen understand now what I meant when I said I had gypped the grim reaper. In other words, I was late to my own funeral! I did not return to October 7, yesterday, *so I was not present to be run over by a* truck.

"When I had finally adjusted the dials my wrist watch told me that there was only one minute left. I pressed the button. Everything went black, and I had a sensation as if I were falling, plunging into a void. You understand that I was not really falling, but that was the way my brain, unaccustomed to motion through the fourth dimension, interpreted it.

"When I arrived in the present, through some trifling inaccuracy, I arrived four feet up in the air instead of on the surface of the earth. So I did a little real falling. When I picked myself up, the time-machine was hopelessly smashed. I recognized the Delaware River nearby, and realized that I had landed several miles north of Philadelphia. I threw the smashed machine into the river, thereby destroying the one shred of evidence I had that the adventure had really happened. You see, a few hours ago, I decided that I would never disclose my story to anyone. I changed my mind when I heard your discussion. I could not resist the temptation to tell what had happened to me, even though you will not believe a word——

"I walked to the nearest highway. A kind-hearted motorist gave me a lift to Lansdowne. During my absence, my apartment had not been re-rented. I obtained a key from my landlord, entered again the rooms I call home, and changed into some clothes not so conspicuous as my thirtieth century costume. Later I met a friend, attended an afternoon church service in Philadelphia, and later dropped in here.

"You are under no obligation to believe a word of it, but I shall state again that it was not a dream, that it really happened to me: that is, it will happen to me a thousand and two years from now.

"I rather wish I knew whether or not the Martians did annihilate the human race in those three days. I would give my life to know what happened to Greta. But Hawkinson is dead, and the manuscript was destroyed in the flames. It's a paradox, gentlemen, but it's true. Good evening."

The spell was broken.

A Disastrous Mistake

Raymond Cannes moved into the next room, picked up a magazine, and sat down in an armchair where we could see him through the doorway. He did it, I think, for no other reason than to give us a chance to discuss his story freely. Until he walked away none of us realized how intently we had been listening to him. Preston laughed.

"Clever," he said. "Almost infernally clever. Are you convinced now, Sherman, that time-traveling is impossible? That fellow has brought out clearly in his tale the reasons why it is absurd to think of going

into the past or the future. I've heard that grandfather argument before. It alone is enough to show the fallacy in the whole fantastic idea. Our friend Cannes is a satirist of no little ability. I'll have to cultivate his acquaintance."

Sherman did not say anything for a long moment. Then he stated slowly and seriously, "Regardless of what you say or think, Preston, I do believe that he was telling the truth, that far from demonstrating the impossibility of time-traveling he has shown conclusively that it is possible, even if there are confusing and mysterious circumstances connected with the process. I'll swear he was sincere in what he said. I was watching his face."

Preston snorted. "Do you mean to tell me that you sat there and swallowed that dope about solid electricity and the NN-4 wave, the *Patrician*, and the paradox?"

"I do, whether you think I'm crazy or not." Preston turned to me. "What do you think about it, Cloukey?"

"I think," said I, "that arriving four feet up in the air wasn't the only trifling inaccuracy that machine made. Didn't it occur to any of you gentlemen that Cannes had his dates mixed? Today isn't the eighth, but Sunday the seventh of October," I glanced at the clock. "It's so close to midnight that it doesn't make much difference."

"By Jove, you're right," ejaculated Preston. "I'll have to tell him about it."

Cannes had left the club a minute previously. The entire group who had listened to his story followed Preston as he went to the door. Stepping outside, we noticed Cannes buying a newspaper at the drug store across the street. Involuntarily I looked up at City Hall Tower. It was still the seventh of October, five minutes to twelve, and suddenly I had a premonition of disaster. Preston called across to him. Raymond Cannes turned, looked at us a minute, and started across the street to us.

A deathly white came to Sherman's face as a speedy light delivery truck careened around the corner at thirty miles an hour. Cannes never knew what hit him.

The End

Coming in the NOVEMBER AMAZING

THE POWER OF THE NAIL

by HARLAN ELLISON

and SAMUEL R. DELANY

ON SALE AUGUST 27th

SAO PAULO LETTER

by Walter Martins

Dear Reader:

I have something to tell you about science fiction, and at the same time something about Brazil.

Suppose you are an American tourist who goes down there. You would probably like to see Copacabana; you might then travel some 600 miles northwest and admire Brasilia, the new Capital; perhaps then to visit the hinterland of the central states and see some coffee plantations, and finally, you might be interested in visiting Bahia, famous for its spicey foods.

All of this nevertheless, is well known from the tourist and airline advertising booklets. On the other hand the size of the country, its population, figures about its resources, etc, you may easily learn from any World Almanac. As large as the U.S. with more than one third of its population, enormous amounts of iron, manganese, quartz, etc. etc. So let me tell you something different; something about mysticism, and the supernatural. After all England is famous for its ghosts in old castles, the West Indies have lots of stories dealing with voodoo, then why not say something about . . . *macumba*?

Yes, the word is *macumba* (mah-'coom-ba). It is a cult, a mixture of spiritualism and African rituals, practiced in many areas of the country, but mainly in Rio and Bahia.

Thus, if instead of spending your days in Rio just lying on the beach under the hot sun of the Copacabana, should you decide to go uptown, most certainly you'd be able to discover *macumba*. The rituals are generally performed on Friday night, and at midnight offerings are made to the spirits. Then, Saturday morning, you may find, near the corner of a street, a bottle of cheap brandy, a dish with some food, and several belongings of some person, all of it tied up in stripes of yellow lace. For it is believed that if one wishes something from the evil spirits, one may bargain with them through this kind of offering. But, you may ask, who believes in stuff like that?

It is an interesting point that while few people believe in it a hundred percent, you will find that also few (very few) dare not be a hundred percent unbelievers. Since it is considered bad luck to touch or kick those offerings (the *macumba* itself) you may be startled to know that Catholics, Protestants, Jews—or even good old atheists prefer to cross to the other sidewalk when they see such fetishes on a street!

This mysticism touches almost everyone and is part of the daily life.

Popular folksongs talk about it; ads in newspapers advertise good *macumbeiros* (experts in *macumba*, of course) who know how to undo and reverse the curse acquired from another *macumba*.

In general, people prefer to follow the old Spanish saying: *no creo en las brujas, pero que las hay, las hay*. In some ways, now, I think I should't have said this, for alas!, I'm afraid of confusing you. For in Brazil we speak Portuguese and not Spanish. Both languages are quite similar, and if you want to know the same proverb in Portuguese, it goes like this: *Não creio nas bruxas, mas que elas existem, existem* (need some help? I don't believe in witches, but they do exist!).

Because of this mysticism, a great part of Brazilian literature, in comtemporary novels and short stories, necessarily deals with the supernatural. In some novels you may feel that the author just takes a neutral, uncommited position, neither stating nor denying the true nature of *macumba*. (For those of you who may be interested in knowing more about it, let me say that most of the stories of the Brazilian writer Jorge Amado have been translated into English, and many of them are full of such material).

Now, then, it would be easy for one to understand that the public reader in Brazil is not only interested but highly appreciative of fantasy fiction. And, why not?, in real science fiction.

Since the beginning of this century the works of Jules Verne have been translated, and have sold one edition after another.

Then, chronologically, we may say that around the thirties the public was well acquainted with the stories of H.G. Wells, some of which had been chosen as selections for book of the month editions. At that time an important series dedicated to adventure stories started to be published: the *Terramarear* (a blended name: Earth-sea-and-air). Together with Burroughs's complete *Tarzan* series and the pirate stories of Emilio Salgari, the space novels of J. Aragon and Gustave Le Rouge were on the bookstands. For some reason the *Princess of Mars* series was never translated into Portuguese.

Then, around the fifties, the new science fiction stories from America arrived in Brazil and they were a success. First with an anthology edited by Mario da Silva Brito, and introducing to the readers: Bradbury, Heinlein, Van Vogt, Bester, Leinster, William Temple and others. It was a huge volume with more than twenty stories and called *Wonders of Science Fiction*. The favorable reaction from the public interested other publishing houses in the field, with the subsequent release of special series.

One of them, *Colecao Argonauta*", has today had almost one hundred and twenty titles published in pocket book form, including most of the novels from Heinlein, Asimov, Bradbury, Clark, Simak and Leinster. Its hundredth volume was an anthology of selected stories, having among others prize winners *The Star* and *Flowers for Algernon* plus the classic *R.U.R.* from Capek.

Other series, in delux soft cover editions, appeared soon after, bringing to the public fine translations of such novels as *Canticle for*

Leibowitz, A Case of Conscience, The Space Merchants, The Green Hills of Earth, etc. The interest among the public made the publishers seek not only for the best, but for everything in the field, and later on Russian writer Beliaev had a special series for his novels, while French writers like Maurice Lima, Richard Bessiere and Jimmy Guieu (including his prize winer *Project Dinosaur*) were being sold at the bookstands, together with stories from Vargo Statten, Stefan Wull, B.R. Bruss and Jean Gaston Vandel.

The best known and most popular writers are about the same as in America, and many anthologies publish names like Bradbury, Clark, Pohl, Asimov and Simak.

But let us skip the authors' names and say that the publishing houses with series or anthologies in the field are: Cia. Editora Nacional, Gertrum Carneiro, Edameris, GRD, Edart, Von Schmidt, Brasiliense, Saraiva, 4 Artes, etc.

Now, after saying all of this, you might expect me to continue and to say that the activities of fandom are intense and many specialized magazines are published—but not so! This reading public is widely scattered so that up to 1965 no club or organization existed, and no attempt have been made to hold a convention. Then, at that time, the newspaper *A Nação* was printing a weekly double-page with short stories and articles about SF, and its staff members decided to organize a whole week of activities and called it the First Brazilian Science Fiction Convention. The events were to be held at night, since a full time convention seemed impracticable. To capture the public interest, the events ranged from conferences (four, one of them by Mr. Flavio Pereira, an expert on flying saucers and astrobiology) to the re-run of old SF movie pictures; from a cocktail party to a book display, from a special presentation in the city planetarium to the staging of Ray Bradbury's play *The Pedestrian* by an amateur group. For this presentation we contacted Mr. Bradbury, who kindly agreed to waive his rights for the convention. The number of attendees was close to a hundred and we considered the convention a success. In 1966 and 1967 we expected other groups in Rio and other states to follow the example, but since nothing happened we're planning to hold another again this year, by September, in Sao Paulo: the 2d BraCon.

Regarding magazines there was none until the beginning of the present year, when in February the first issue of Galaxia 2000 reached the stands. Nevertheless, it has been common practice for general fiction and mystery magazines to print SF stories.

Coming back again to the subject of books, you may wonder whether there is anyone writing SF in Brazil, and about what do they write.

A literary critic and journalist, Fausto Cunha is one of the best, with a large production of short stories, some of them collected in his book *The Martian Nights*. He's a man with good ideas who strives to base his stories on solid scientific background. Time travel, alien invasions, but mostly the study of human reaction when faced with different times or environments are his sub-

jects. Miss Dinah Silveira de Queiroz has, among her stories in this field, a wonderful sociological satire, in which a carismatic politician in the future (Brazil) organizes a party based on his strong feelings against corruption. He vomits just at the simple mention of a dishonest man. Nilson Martello and Clovis Garcia, sharing the same point of view as Bradbury on the situation of man in the future society, have both of them seen their short stories published in more than one anthology. The former being also the author of *The Thousands Shadows of the New Moon*, a somber collection of short stories on Earth after an atomic war, which among other things resulted in the moon breaking apart. And there are many others, like Antonio Olinto, Andre Carneiro, Zora Zeltjan, Ney Moraes, Rubens Scavone, whose work appears regularly in books and anthologies.

Now, last but not least, just a word about a man who by being so lively and detailed in his writings, and at the same time so conspicuous in his way of living, finally made a whole religious body believe that one of his SF novels was really a true narrative. For this reason they started to consider him as sort of a new prophet. This man is Mr. Jeronimo Monteiro, the very first to start in the SF field in Brazil, some thirty years ago. His works consist of SF, mystery and detective novels, English translations, radio serializations, and articles for a large number of newspapers. Among his best novels are *3 Months in the 81st Century* and *Escape to Nowwhere*. Once he went with some friends on a long expedition to the jungles of central Brazil, where he was able to see and to visit many small villages, and also some old, abandoned towns. Back in Sao Paulo, where he lives, he wrote a novel, *The Lost City*, in which both the route of the expedition and his own experiences in the jungle serve as a basis for an imaginative SF story.

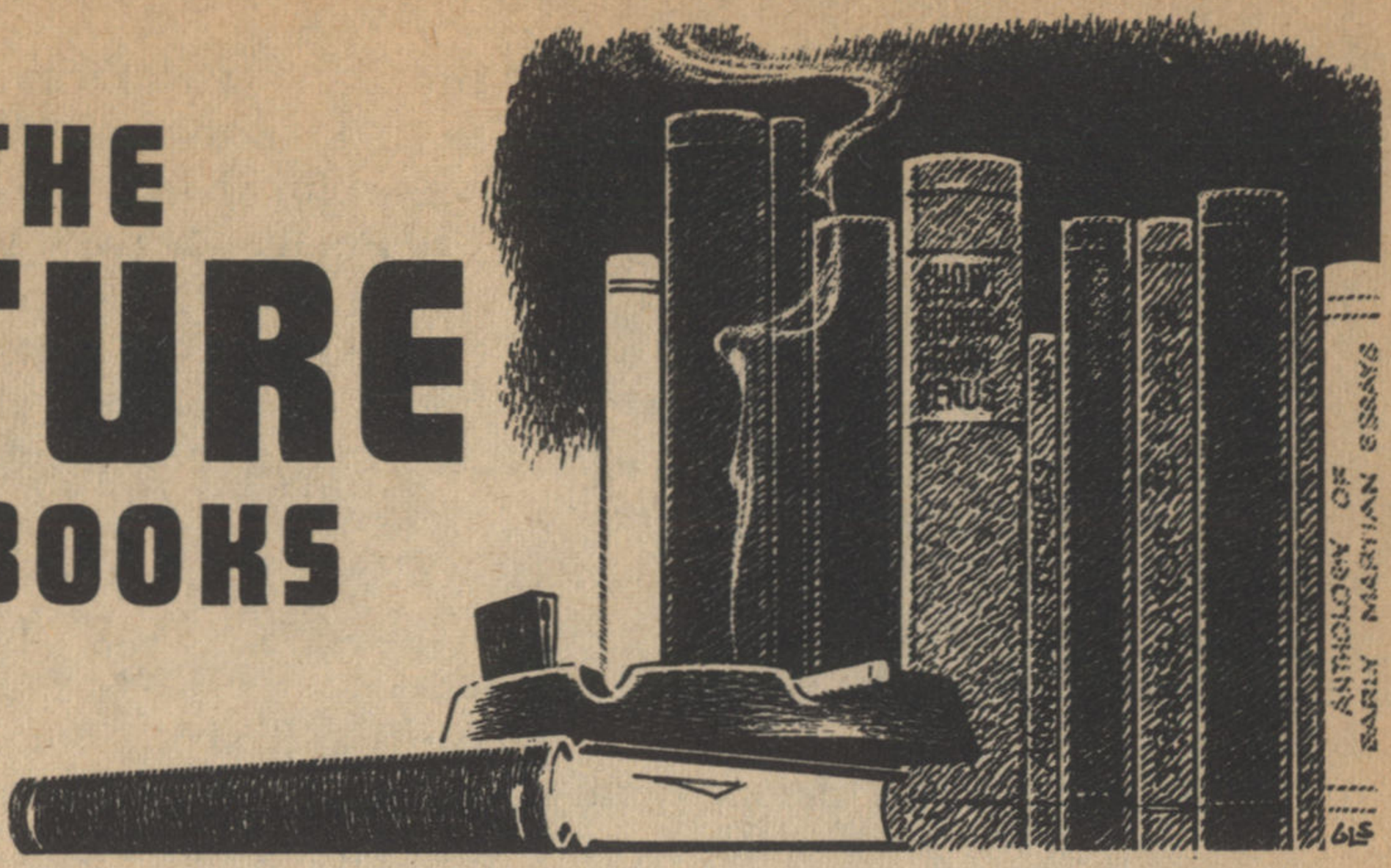
There is a group of theosophists which believes, in a dogmatic way, that the survivors of the destroyed continent of Atlantis still live, through their descendants, in underground cities in the central part of Brazil. Just for the record, let us say that they also believe that the flying saucers are merely the vehicles of these people.

Now, when they read *The Lost City*, so detailed and so factual in its descriptions, and when they considered that Monteiro had really made a trip to that region, they simply concluded that if he knew so much about the Lost City it was because he was an Atlantian himself.

A man of Atlantis who came to live among us, to give us the Truth. Unhappily Mr. Monteiro, one of the kindest and most wonderful persons I have ever met, has no Truth whatever to tell. He denied, and still denies vehemently that he is from Atlantis. But his "followers" just comment among themselves: "HE knows better!"

Summing up: Mr. Monteiro finally accepted an offer to run through a series of mystic tests in the hope of stopping the nonsense. But to his disgrace he passed them. The religious group discovered that his cranium had the exact measurements that should be expected of a true citizen of Atlantis . . . The End

THE FUTURE IN BOOKS



CRYPTOZOIC! by Brian W. Aldiss, Doubleday and Co., Inc., New York, 1968. 240 pp., $4.50.

Every major science-fiction writer eventually takes at least one crack at time travel, if only to hold the franchise, and with sad regularity comes a cropper on it. Aside from the dangers of the obvious paradoxes, it is also quite customary to ignore the fact that, so far as we can know today, time travel is forbidden by the Second Law of Thermodynamics, and more generally by the law of conservation of energy.

Aldiss does not ignore it. His time travellers are only observers; they are invisible and impalpable except to each other, can exert no effect upon the past, and cannot reach the future at all. In deference to relativity, Aldiss also introduces a concept of time density: the longer a given building has been standing in one place, for example, the more difficult it is for the time traveller to penetrate its walls. The mechanism of travelling is mental and drug-induced—and in fact, many people use it as a drug, to escape an increasingly restricted, penurious and otherwise unpleasant future.

All this is ingenious enough, but it is not the essence of the novel. Neither is the surface plot, which is a complex but otherwise standard affair of scheming and spying against a succession of dictatorships. The hero is superficially almost as standard: he is a failed artist who for some baffling reason (since he is ineffectual, to say nothing of unreliable) keeps getting recruited by the secret police and the counterplotters.

But none of this is anything more than a framework, and some of it is sheer scaffolding. Aldiss' central point is that even though the time traveller cannot act upon the past, it can affect him, and drastically. His people are unconsciously aware of this, so that the closer they approach their own immediate pasts, the more difficult the travelling becomes; and when his hero successfully breaks this mental barrier and manages to visit his own family history, the emotional effects are disastrous.

Hence the novel is essentially a

tragedy, though it has many moments of comedy in the best Elizabethan tradition. As is usual for Aldiss, it is beautifully written and occasionally outright poetic. It ends satisfyingly with a resounding ambiguity which the reader must resolve for himself. (The British title, AN AGE, puns upon this.)

This is a novel which came perilously close to being a failure, thanks to the banality of some of its props. It is rescued, however, by wealth of observation, depth of emotion, and faultless prose.

—William Atheling, Jr.

CHOCKY, by John Wyndham; Ballantine Books, New York, 1968, 75c.

Since there are a limited number of openings for serials in the science fiction magazines, writers commonly carve portions of their novels to sell as short stories. Credit notes in the front of *A Torrent of Faces*, the new novel by James Blish and Norman L. Knight, tell us that Chapters Four and Five appeared as one story, Chapters Seven, Eight and Ten as another, and Chapters Six, Nine and Eleven as a third.

The opposite practice, stretching and padding shorter magazine stories, and republishing them as novels, is also not uncommon. It is also almost always a bad practice. Short stories carved out of novels are likely to be bloated. Novels stretched out of shorter stories are likely to be thin and static. This was true, for instance, of Zelazny's *The Dream Master* and Blish's *VOR*, both produced in this manner, and it is true of *Chocky* by John Wyndham.

Chocky was a novelet here in 1963. It was a mild, pleasant story about an English boy contacted by the mind of an alien. At the end, the alien explains itself and says goodbye.

The story is still mild, still pleasant, and much longer. It is not as much longer as it seems to be—it is printed on thick paper, in almost embarrassingly large type, with wide slug lines and more than fifteen blank pages in its count of 221—but it is longer than it once was. However, the story is not substantially changed. It was a slow and undramatic novelet, and it is now a slow and undramatic novel.

There is some intended drama in *Chocky*—a near-drowning and a kidnapping—but Wyndham has had these events occur off-stage. This is the result of Wyndham's choice of narrator, the boy's father. Wyndham's usual practice has been to tell his stories through the eyes of a narrator hardly defined beyond being warm and male and British. If your subject is general cataclysm, as it was in Wyndham's earlier *Day of the Triffids* and *Out of the Deeps*, there is an advantage to blandness. The character can witness disaster and report it without competing for the reader's attention. Perhaps out of habit, Wynham has made his narrator here just such a character. But the subject is not general cataclysm, the character cannot be allowed to witness drama because he might settle the book fifty pages too early, and when he steps back out of the way there is little to command our attention.

In a field where pure action has

too often been made to substitute for command of English and for simple good sense, it is pleasant to encounter a book that is literate and not totally witless. But *Chocky* has little else to recommend it, and for those who expected a substantial work from Wyndham after his long absence, it has to stand as a disappointment.

—Alexei Panshin

HEINLEIN IN DIMENSION, by Alexei Panshin, Advent:publishers (Chicago), 1968. Introduction by James Blish. ix + 198 pp. and index, $6.00

It is always pleasant to welcome a new associate to the field of criticism, and upon reading this volume I instantly contacted the editor of this journal and recommended that Mr. Panshin be approached to write reviews. He is apparently a young man, and already an astute one, and has produced a notable first work. In order not to baffle my critics I shall lump all the praise here, which they can scan briefly if they must, before getting to my normal acerbic and curmudgeonly comments.

Heinlein, both for his own writings and the impact he has had on other writers, deserves this analysis in depth. Mr. Panshin dissects, quotes, concludes and comments, all with a keen eye and ready quote. He admires the works of this author, but is not blind to his faults. He recognizes that fact the compleat writer is important and appears to have worked hard to obtain all the works that form the corpus, including Heinlein's non-fiction. The appendix, listing the author's writings, appears to be complete and error free. This book should be purchased by every serious student of the genre, would be of interest to anyone who enjoys science fiction, and is an absolute must for any library. University libraries are advised to purchase at least five copies.

There, quite wholesome comments if I must say so, and one can clip at the bottom of the last paragraph if one wishes to have a cutting to show around. But I do have some rather mild complaints. Firstly, this volume contains a bibliography of the "Critical Works on the Field of Science Fiction" which includes A REQUIEM FOR ASTOUNDING by Alva Rogers. This book, while amusing, is simply uncritical nostalgia and should be labeled as such. Also, Mr. Panshin lists the works of the unreliable Mr. Moskowitz without appending a disclaimer, such as the one printed on American packets of fags about injury to the health, that these books are unreliable as to detail and rife with factual errors.

Some persons might not believe it, but I hate to take a man to task for being born too late. But it must be done. Mr. Panshin entered this world in 1940, just when Heinlein was at his zenith, therefore never experienced the genuine pleasure of reading the stories in their proper ambience. Perhaps this is why he is a bit cool towards these works. Early Hemingway reads like a modern caricature of Hemingway simply because it was the first and broke the ground for others to follow. The same might be said of the estimable Mr. Heinlein. The totality of a man's

writings must be viewed with the undated world eye of criticism. Yet when trying to place a writer in true perspective to his era it does help to have been around at the time. It is not necessary for Mr. Panshin to apologize for being born twenty years too late, but it would help if he were aware of the fact and made due allowances.

HAUSER'S MEMORY, by Curt Siodmak, Putnam's (New York), 1968. 184 pp., $4.95.

Siodmak, now there's a name to conjure with, author of the near legendary DONOVAN'S BRAIN, and, as screen writer and director, the man who originated the idea of floating aerodromes at sea in the film F.P.1 DOES NOT REPLY. It has been 25 years since that evil Irish mind controlled others. What great novel has been incubating all this time? Bless me if it isn't Donovan striking again: Mr. Siodmak can not be accused of letting a good idea die before the last ounce of nourishment has been worried from it.

The author has been doing his homework and discarded the old grey matter in the flask and substituted RNA. Inspired, no doubt, by the planarian experiments where cannibalistic flatworms gained knowledge by eating their educated fellows. Here the RNA is removed from the brain of a dying German scientist, the Hauser of the title. At this point the science ends and an international chase story is blended with thinly disguised demonic possession as Hauser takes over his hosts brain. In the end the author takes the cowardly way out by killing off the body with the doubly-occupied brain instead of working hard on all the possible and interesting conclusions. One can understand his problem, he knows bugger-all about science, and his laboratory, ". . . flashing lights in boxes . . ." is a description of a cinema set, not the real thing.

A word of praise must be given to the author's sophisticated European view that all secret police are morally corrupt so that the CIA men are identical with their German and Russian counterparts. But one blushing daisy does not make a spring. The continual errors of fact are legion. Not a single fact in the long adventure in Denmark is correct (thank you is *tak* not *tack*, the square is *Nicholaj Plads* not *Nicolij Plads*, etc.). I feel it is not too much to ask of an author to do a little labor with guide book and dictionary. The crossing from East Germany to Czechoslovakia is humorous in its errors. Mr. Siodmak would have us believe in "watchtowers, machine guns and hand grenades . . . barbed wire . . . high tension . . . Spikes pushed into the ground at short distances" through which his characters pass by flashing passports and their automobile is waved on. Really? I have crossed the border at that point myself, some five years ago, and found an ancient building, a tattered wire fence, and a bent metal pole blocking the road, this last guarded by sleepy soldier with a dirty and ancient rifle. My papers were whisked away and I sat in my car for a good 45 minutes smoking pipefuls of Taras Bulba tobacco, lulled into a doze by the con-

tinuous hammer of rubber stamps from the building. Accuracy of detail is the sound building stone of the science fiction and the adventure novel, without which disbelief cannot be suspended. Mr. Siodmak prefers to dwell in the imaginary world of the cinema and telly rather than the real one.

Which means that this book will undoubtedly be purchased to make a highly successful commercial film that will embody all the errors of the original. Pity. —LeRoy Tanner

OF MEN AND MONSTERS, William Tenn. Ballantine Books (New York), 1968. Paper, 256 pp., 75c.

It is a distinct pleasure to read an enjoyable book for a change. Too much science fiction, even good SF, tends to pluck a single string for the entire length of the book. We do like to find out how the people are rescued from the bottom of the sea of dust, and we have to be interested by the reactions of the few spacemen left after our Earth is destroyed. These problems are vital and to examine them fully their authors need an entire book. Mr. Tenn has pushed aside these restrictions and has written one of the three or four books of the last decade that are well rounded novels as well as being good SF.

The author, well known for his short stories, has mastered the novel form with a single bound. This is a perfect example of second generation SF, the reexamination in depth of ideas that were handled badly or inadequately the first time around. The premise is familiar—and stated clearly in the title. The Earth has been invaded and defeated by monsters from space. The remnents of mankind now live in caves after being driven back to savagery. From this unpromising material, and the traditional ritual of passage in SF where a youth discovers the truth about his world, a novel has been created.

It works on all levels. Action carries it forward and the life and death suspense builds and never dies. Strange scenes and concepts are spread out for our attention, and there is a powerful kicker at the end that it would be shameful to reveal. It is also allegory—what good SF isn't?—and, while being complete unto itself, it still makes sense in relation to our time, our people, our mores. A touch I particularly enjoyed was that of all the varied tribes of mankind, the intellectual tribe, with all the intellectual's weaknesses and strengths, was obviously descended from the Jews. After umpteen thousand Aryan heroes and heroines, all the Johnjones, Smiths, etc., how pleasant to have protagonists who are much removed yet still Jewish.

It should be mentioned that Ballantine is beginning a new thing in SF with this book by publishing it and five other Tenn books at the same time. This block publishing is new to SF, though Penguin in England have done it with success for major novelists, and I wish it all the luck. Sales should increase through advertising and availability on the crowded book racks. What is good for one writer is good for all in our particular microcosm.

Harry Harrison

BEST SF: 1967, Harry Harrison and Brian W. Aldiss, editors. Berkley Publishing Corp., New York, 1968. 256 pp., paper, 75c

Among his other good gifts, Harry Harrison is the man Diogenes was looking for; so when he first broached this anthology to me, I welcomed the notion, on the grounds that existing such annuals in my opinion were not meeting certain minimum standards of fairness toward the reader. After discussing these further, Harry said in effect, "Write 'em down formally and I'll print 'em. Then the reader can judge for himself."

A tough test; but I think the outcome passes it. This volume is unusual in many respects. It is almost all fiction; though there are three editorials and the usual blurbs, the rest consists of stories and nothing but stories. With three exceptions—two of them very short—all the stories are science fiction in the traditional sense of the term; it has at long last occurred to an editor that since *all* fiction is speculative, that word can be stretched to cover anything, and all too often is—but not here. With one trifling exception, all the stories actually did first appear in 1967, just as the title claims. All the stories are the editors' own choices, over-ruled by nobody.

I think the result is definitive. I can even find it in my heart to forgive two of the fantasies, a brief grotesque by J. G. Ballard and Harlan Ellison's raw but powerful "Pretty Maggie Moneyeyes," both of which break many more rules than my few and get away with it beautifully. (The third, a mothball by Thurber, is not even worth reading. Oh well.) The other twelve stories are the pure quill, of which my favorites, by a narrow margin, are "Hawksbill Station" by the New Robert Silverberg, and Fritz Leiber's "Answering Service." The British, except for Ballard, do not show up too well—the Fred Hoyle piece is only a thin joke, and I *do* wish Clyde Crane Shackleton would go back to his rotifers—but possibly that is because they haven't been writing much traditional science fiction lately. The other contributors are John T. Sladek, Ben Bova, Kit Reed, Frank M. Robinson, A. Bertram Chandler, Kris Neville, Keith Laumer and Gary Wright.

I call your particular attention to the concluding critical essay by Brian Aldiss, in which he successfully plots a middle course between some rather narrow views of my own which in part, I must confess, were advanced for the sake of argument) and Frederick Pohl's, and those of the Merrill-Moorcock "New Wave" school. If s-f has a future, I believe Brian has here shown what it is most likely to be like. I hope it turns out to be a self-fulfilling prophecy.

—James Blish

EDITORIAL(Continued from page 4)
around a different system of (mechanisms)." What we know is good and right—while what is new is wrong and must be opposed consciously, and even subconsciously.

The group subconscious of the non-science fiction readers, reviewers and critics is hard at work backtracking away from the stuff. And from the impact of science upon the world today, don't forget that. Ignorance of, and prejudice against, the real world comes first. These people many times take pride in their ignorance of the basic knowledge of science—as though ignorance at any time were a thing of pride—so must therefore reject the running-nose child of science, science fiction. Knowing that these people are wrong will not help in the slightest. They are culture-bound and resistant to all change. They will accept SF as only being of value when written by a non-SF writer. "It's good, but of course it is not SF." By their standards it is not, since SF cannot possibly be any good by their terms of definition.

Pity them, for we are in touch with reality and they are not. They are like generals fighting this war with the weapons of the last. The world they were brought up in no longer exists. A writer of worth cannot be a complete writer today unless he is aware of the realities of the world of science which affects every aspect of his life.

Be superior, readers. They are the ones who are missing something: we are not. We can enjoy everything that they enjoy—plus. We are what we are and we would not want to change it if we could. Relax and enjoy it.

Harry Harrison

FOR THE BEST IN SCIENCE FICTION AND FANTASY

SCIENCE FICTION•FANTASY

FANTASTIC

-----CLIP AND MAIL THIS MONEY-SAVING COUPON TODAY.-----

Enter my subscription for FANTASTIC STORIES

6 Issues only $2.50 ..... 12 Issues only $4.50 .....

Name _____

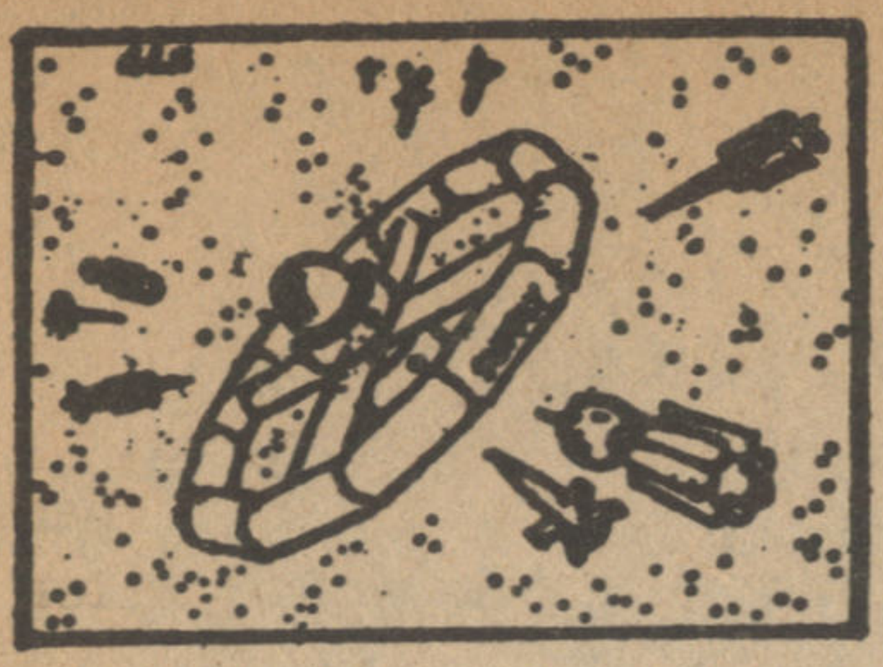
Address _____

City _____ State _____ Zip Code _____

Send the following free issues .....

(Add 50¢ per year additional postage for Canada and Pan American countries; and $1 per year extra for all other foreign orders.)

Mail to: Fantastic / Box 7, Oakland Gardens, Flushing, N.Y. 11364



CLASSIFIED market place

RATES AND TERMS: Ultimate Fiction Group consists of two books . . . Amazing & Fantastic. Space can only be bought on GROUP BASIS at the rate of $.50 per word . . . (including name and address). Minimum order of $5.00 (10 words). Payment must accompany copy except when ads are placed by accredited Advertising agency. Frequency discount: 5% for 6 months, 10% for 12 months paid in advance.

GENERAL INFORMATION: First word in all ads set in bold caps at no extra charge. Additional words may be set in bold caps at 5c extra per word. All copy subject to publisher's approval. Closing Date: 1st of the 3rd preceding month (for example, April issue closes January 1st). Send order and remittance to: Leonard Greene, Inc., 180 Madison Avenue, New York, N.Y. 10016.

AUTHORS WANTED

LOOKING FOR a Publisher? Learn how you can have your book published, promoted, distributed. Send for Free booklet "AF". Vantage Press, 120 West 31st Street, New York 1.

BOOKS

SPECIALISTS: Science-Fiction, Fantasy Weird fiction, Books, Pocketbooks. Lists issued. Stephen's Book Service, 67 Third Avenue, New York, N.Y.

SF Bargains. List free. Werewolf Bookshop, Verona 47, Pa.

BOOKS & MAGAZINES

COLLECTORS! Buy, sell, trade, advertise in Fantasy Collector, monthly, twelve issues: $1. Box 550 Evergreen, Colo. 80439.

NAME the book—we'll find it for you! Out of print book specialists. All subjects. (Title alone is sufficient) Write—no obligation. Books-On-File, Dept. AMF, Union City, New Jersey.

BACK issues Science Fiction magazines, books. Pocket editions, 5 for $1.15. Free lists. Jerry Weiss, 90 Second St., Brooklyn 11, N.Y.

FOR MEN

CONFIDENTIAL Directory lists 65 dealers, unusual Adult items - $1.00. Rocco, Box 4015-UE, Miami Beach, Florida 33141

BUSINESS OPPORTUNITIES

START ROCK-JEWELRY Business. Rock Tumbler, 2 lb. capacity, 4 unbreakable barrels, 1/50 H.P. A.C. motor, 5 lbs. Gem Rock, 3 lbs. tumbling grits. Only $18.50. Price list of necklace chains, etc. on request. Richard Loomis, 8149 East Thomas, Scottsdale, Az. 85257

HYPNOTISM

FREE HYPNOTISM, self-hypnosis. Sleep learning catalog! Drawer A-F 400, Ruidoso, New Mexico 99345

HYPNOTISM Revealed. Free Illustrated Details: Powers, 8721 Sunset, Hollywood, California 90069.

MAGAZINES

SCIENTIFANTASY specialist magazines, books. Free catalog. Gerry de la Ree, 75 Wyckoff, Wyckoff, N.J. 07481

MISCELLANEOUS

PARAPSYCHOLOGY. Aid and instruction. Write Box 133, Redmond, Washington 98065

AUTOGRAPHS. 1½ page letter written by Jules Verne in 1884, taped but in good condition: $40.00. Perfect 1½ page H.G. Wells letter: $30.00. Others Send requests. R. E. Cole Autographs, Kingsbury Rd., Spencer, Mass. 01562

NEEDLER, about religious, psychiatric and government evils. 47 Chapters. Price $1.00 postpaid. J. Williams, 1027 East 2nd St., McMinnville, Oregon 97128

MAGAZINES

FANTASM—A semi-professional magazine devoted to science fiction, comics, and related fields of fantasy. A must for all serious minded fans. 40c. Charles R. Watson, 741-A Casplan Street, Atlanta, Georgia 30310

MANHATTAN DOME(continued from page 29)

He nodded, with a wince. "I checked it out on the computer to find out how much rain you need to keep the air clean. Doesn't take much . . . a few short showers every day ought to do it. And we've got tons of water from the air conditioners that we can feed into the sprinklers. We could make it rain all night long if we want to."

Tracy was beaming now. "Ed, you're a genius!"

"Geniuses ought to get kissed."

Several minutes later they unwrapped themselves from each other and watched the showers sprinkling here and there across Manhattan. Ed glowed like a man who had just singlehandedly beaten City Hall, Mother Nature, and his future father-in-law.

The End

"LABYRINTH"(continued from page 109)

distant Sirius," Professor Jameson offered. "We may be long in reaching it, we may never reach the star but I have a definite reason. Besides, there are many systems between here and Sirius which we shall pass."

"What interests you in the system of Sirius?" 744U-21 asked.

"You will remember that on our last visit to earth we discovered by means of Zlestrm's time bubble that mankind had deserted the earth for a world of Sirius five million years after the twentieth century. That was thirty-five million years ago. It is highly improbable that any semblance of mankind remains. Such a hope represents extreme futility, yet it may be that there are records of some kind left behind. That is why eventually I wish to enter the system of Sirius."

"Another encounter such as we have just escaped," said 6W-438 staring back at the gibbous orb of a dwindling planet, "and we may never reach Sirius."

To this pessimism, Professor Jameson uttered a bit of sound philosophy taken from a long dead civilization of the remote and distant past.

"If it were not for the clouds, we would not enjoy the sun."

The End

Coming in the NOVEMBER AMAZING

THE POWER OF THE NAIL

by HARLAN ELLISON

and SAMUEL R. DELANY

ON SALE AUGUST 27th

These great minds were Rosicrucians . . .

WHAT SECRET POWER DID THEY POSSESS?



Benjamin Franklin



Isaac Newton



Francis Bacon

Why were these men great?

How does anyone — man or woman — achieve greatness? Is it not by mastery of the powers within ourselves?

Know the mysterious world within you! Attune yourself to the wisdom of the ages! Grasp the inner power of your mind! Learn the secrets of a full and peaceful life!

Benjamin Franklin, statesman and inventor . . . Isaac Newton, discoverer of the Law of Gravitation . . . Francis Bacon, philosopher and scientist . . . like many other learned and great men and women . . . were Rosicrucians. The Rosicrucians (NOT a religious organization) have been in existence for centuries. Today, headquarters of the Rosicrucians send over seven million pieces of mail annually to all parts of the world.

The ROSICRUCIANS

San Jose (AMORC) California 95114, U.S.A.

THIS BOOK FREE!



Write for your FREE copy of "The Mastery of Life" — TODAY. No obligation. A nonprofit organization. Address: Scribe M.L.C.

Scribe M.L.C.
The ROSICRUCIANS
(AMORC)
San Jose, California 95114, U.S.A.

SEND THIS COUPON
PLEASE INCLUDE YOUR ZIP CODE

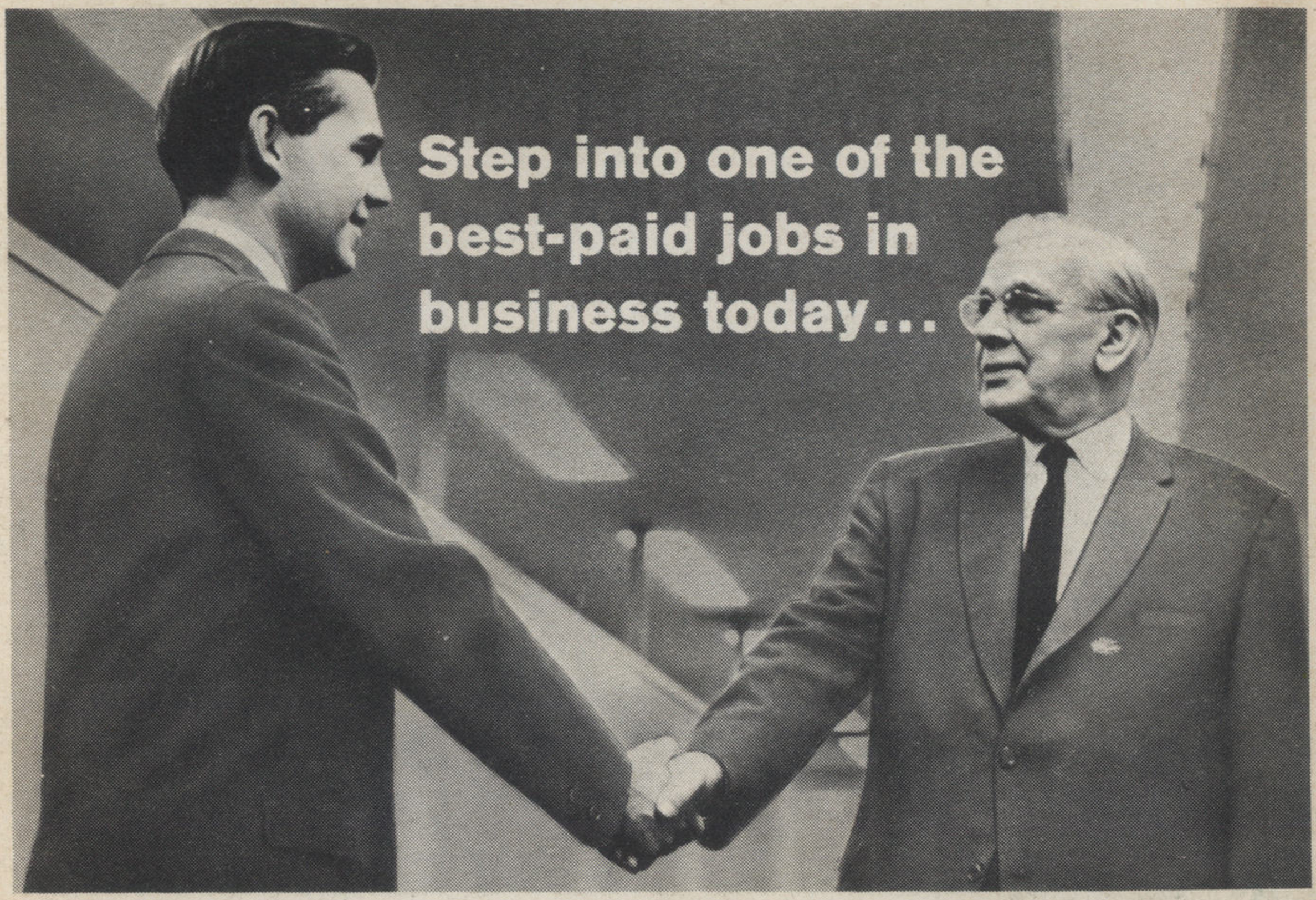
Please send me the *free* book, *The Mastery of Life*, which explains how I may learn to use my faculties and powers of mind.

Name_____

Address_____

City_____

State_____



Be an ACCOUNTANT

Train in your spare time with LaSalle

LaSalle graduates report up to 56% increased pay the first year

THE demand for trained Accountants far exceeds the supply. Salaries keep going higher, promotions come faster. Many men trained in Accounting are being moved up to important management positions. Why remain in a dull job with insufficient pay when you can reap such big rewards in money and prestige?

You can take LaSalle Accounting training at home, in your spare hours, without any previous bookkeeping experience. LaSalle's distinguished faculty starts you at the beginning; explains every basic Accounting principle and method; gives you actual Accounting problems with your lessons, then corrects and grades your work; shows you exactly how accountants on the job handle these problems. Your training is complete, practical, and enjoyable. You are thoroughly prepared for every Accounting task you will handle in the business world.

Your career could not be in more experienced hands. For more than half a century, LaSalle has been a world leader in business training, with over 1,000,000 students. More than 5,500 Certified Public Accountants have trained with LaSalle. A LaSalle diploma in Accounting is a credential respected by America's biggest companies.

LA SALLE EXTENSION UNIVERSITY
A Correspondence Institution
417 S. Dearborn, Dept. 80-032 Chicago, Illinois 60605

Please send me, free of cost or obligation, your illustrated booklet "Opportunities in Accounting".

Name ..... Age .....

Address ..... County .....

City & State ..... Zip No. .....

Occupation ..... Working Hours ..... A.M. ..... P.M.

101X

Send for Free Booklet and Sample Lesson



If you are truly seeking a more rewarding job, with higher pay, a solid position in the business world, and all the good things that come with success, you owe it to yourself to read LaSalle's famous booklet "Opportunities in Accounting". With it you will receive a free sample lesson in Accounting which will demonstrate how LaSalle makes home study easy, interesting and thoroughly practical. Mail the coupon today.

LA SALLE EXTENSION UNIVERSITY
A Correspondence Institution
417 South Dearborn, Chicago, Illinois 60605