

Astounding

January 1953 • 35 Cents

SCIENCE FICTION



Un-Man BY POUL ANDERSON

GP



THE SHADOW

MUTUAL BROADCASTING SYSTEM

Sponsored every week

over the entire

Mutual Broadcasting System

by

Wildroot Company, Inc.,

makers of

Wildroot Cream-Oil,

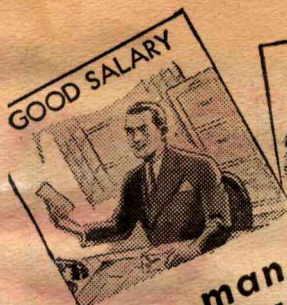
America's most popular

hair tonic,

Lady Wildroot Shampoo

and Lady Wildroot Cream

Hair Dressing



To the man who wants to enjoy
an **ACCOUNTANT'S** CAREER

IF you're that man, here's something that will interest you.

Not a magic formula—but a get-rich-quick scheme—but something more substantial, more practical.

Of course, you need something more than just the desire to be an accountant. You've got to pay the price—be willing to study earnestly, thoroughly.

Still, wouldn't it be worth your while to sacrifice some of your leisure in favor of interesting home study—over a comparatively brief period? Always provided that the rewards were good—a salary of \$4,000 to \$10,000?

An accountant's duties are interesting, varied and of real worth to his employers. He has *standing!*

Do you feel that such things aren't for you? Well, don't be too sure. Very possibly they *can* be!

Why not, like so many before you, investigate LaSalle's modern Problem Method of training for an accountancy position?

Just suppose you were permitted to work in a large accounting house under the personal supervision of an expert accountant. Suppose, with his aid, you studied accounting principles and solved problems day by day—easy ones at first—then more difficult ones. If you could do this—and could turn to him for advice as the problems became complex—soon you'd master them all.

That's the training you follow in principle under the LaSalle Problem Method.

You cover accountancy from the basic Principles right up through Accountancy Systems and Income Tax Procedure. Then you add C. P. A. Training and prepare for the C. P. A. examinations.

As you go along, you absorb the principles of Auditing, Cost Accounting, Business Law, Sta-

tistical Control, Organization, Management and Finance.

Your progress is as speedy as you care to make it—depending on your own eagerness to learn and the time you spend in study.

Will recognition come? The only answer, as you know, is that success *does* come to the man who is really *trained*. It's possible your employers will notice your improvement in a very few weeks or months. Indeed, many LaSalle graduates have paid for their training—with increased earnings—before they have completed it! For accountants, who are trained in organization and management, are the executives of the future.

Write For This Free Book

For your own good, don't put off investigation of *all* the facts. Write for our free 48-page book, "Accountancy, The Profession That Pays." It'll prove that accountancy offers brilliant futures to those who aren't afraid of serious home study. Send us the coupon *now*.

Over 3500 Certified Public Accountants
among LaSalle alumni

LASALLE EXTENSION UNIVERSITY
A Correspondence Institution

417 S. Dearborn St. Dept. H-214, Chicago 5, Ill.

I want to be an accountant. Send me without obligation, "Accountancy, The Profession That Pays."

Name.....Age.....

Address.....

City, Zone & State.....

Astounding **SCIENCE FICTION**

JANUARY 1953

VOL. L, NO. 5

SHORT NOVEL

UN-MAN by *Poul Anderson* 9

NOVELETTES

THESE SHALL NOT BE LOST by *E. B. Cole* 98

THE CAPTIVES by *Julian Chain* 127

SHORT STORIES

SECRET by *Lee Cahn* 122

STAMP FROM MOSCOW by *Steve Benedict* 148

ARTICLES

THE FIRST POWER PILE 82

EARTH'S GHOSTLY COMPANION IN SPACE
by *R. S. Richardson* 93

READERS' DEPARTMENTS

THE EDITOR'S PAGE 6

THE ANALYTICAL LABORATORY 81

THE REFERENCE LIBRARY . . . by *P. Schuyler Miller* 152

BRASS TACKS 162

Editor

Assistant Editor

Adv. Mgr.

JOHN W. CAMPBELL, JR.

KAY TARRANT

WALTER J. MC BRIDE

COVER BY PAWELKA

Illustrations by Cartier, Orban, Pawelka and van Dongen

The editorial contents have not been published before, are protected by copyright and cannot be reprinted without publishers' permission. All stories in this magazine are fiction. No actual persons are designated by name or character. Any similarity is coincidental.

Astounding SCIENCE FICTION published monthly by Street & Smith Publications, Incorporated at 575 Madison Avenue, New York 22, New York. Gerald H. Smith, President; Ralph R. Whittaker, Jr., Executive Vice President; Arthur P. Lawler, Vice President and Secretary; Thomas H. Kaiser, Treasurer. Copyright, 1952, in U. S. A. and Great Britain by Street & Smith Publications, Inc. Entered as Second Class matter at the Post Office, New York, N. Y. Subscriptions \$3.50 for one year and \$6.00 for two years in United States and Possessions; \$4.50 for one year and \$7.75 for two years in Canada; \$4.75 for one year and \$8.00 for two years in Pan American Union, Philippine Islands and Spain. Elsewhere \$5.00 for one year and \$8.50 for two years. When possible allow four weeks for change of address. Give old address and new address when notifying us. We cannot accept responsibility for unsolicited manuscripts or art work. Any material submitted must include return postage. All subscriptions should be addressed to Subscription Dept., Street & Smith Publications, Incorporated, 304 East 45th Street, New York 17, New York.

\$3.50 per Year in U. S. A.

Printed in  the U. S. A.

35c per Copy

NEXT ISSUE ON SALE JANUARY 21, 1953

How Do You Know You Can't Write?



"Since enrolling in the N.I.A. Course eight months ago I have sold fifteen feature stories to the Lewiston Evening Journal. Also, I am a regular contributor to the Maine Legionnaire. N.I.A. Training is to a writer what a road map is to a motorist." — Mildred B. Fossett, 12 Spruce St., Gardiner, Maine.



"I wish to express appreciation to the Newspaper Institute. The course enabled me to attain the rank of Chief Journalist, the highest enlisted rank in the Navy, and also one of the hardest to achieve as there are only 46 in the entire Navy." — John B. Smith, JOC, USN, Headquarters, Naval Air Training Command, U. S. Naval Air Station, Pensacola, Fla.

Have you ever tried?

Have you ever attempted even the least bit of training, under competent guidance?

Or have you been sitting back, as it is so easy to do, waiting for the day to come when you will awaken, all of a sudden, to the discovery, "I am a writer"?

If the latter course is the one of your choosing, you probably *never* will write. Lawyers must be law clerks. Doctors must be internes. Engineers must be draftsmen. We all know that; in our time, the egg does come before the chicken.

It is seldom that anyone becomes a writer until he (or she) has been writing for some time. That is why so many authors and writers spring up out of the newspaper business. The day-to-day necessity of writing — of gathering material about which to write — develops their talent, their insight, their background and their confidence as nothing else could.

That is why the Newspaper Institute of America bases its writing instruction on journalism — continuous writing — the training that has produced so many successful authors.

Learn to Write by Writing

NEWSPAPER Institute training is based on the New York Copy Desk Method. It starts and keeps you writing in your own home, on your own time. Week by week you receive actual assignments, just as if you were right at work on a great metropolitan daily. Your writing is *individually* corrected and constructively criticized. Thoroughly experienced, practical, active writers are responsible for this instruction. Under such sympathetic guidance, you will find that (instead of vainly trying to copy someone else's writing tricks) you are rapidly developing your own distinctive, self-flavored style — undergoing an experience that has a thrill to it and which, at the same time, develops in you the power to make your feelings articulate.

Many people who *should* be writing become awestruck by fabulous stories about millionaire authors, and, therefore, give little thought to the \$25, \$50 and \$100 or more that can often be earned for material that takes little time to write — stories, articles on business, hobbies, sports, news items, human interest stories, science fiction material, local and club activities, homemaking, travel, etc. — things that can easily be turned out in leisure hours, and often on the impulse of the moment.

A Chance to test yourself — FREE!

Our unique FREE Writing Aptitude Test tells whether you possess the fundamental qualities necessary to successful writing — acute observation, dramatic instinct, creative imagination, etc. You'll enjoy taking this test. It's FREE. Just mail the coupon today and see what our editors say. Newspaper Institute of America, One Park Avenue, New York 16, N. Y. (Founded 1925). Course approved for Veterans' Training.

Free

NEWSPAPER INSTITUTE OF AMERICA
ONE PARK AVENUE, NEW YORK 16, N. Y.

Send me, without cost or obligation, your FREE Writing Aptitude Test and further information about writing for Profit, as Promised in Astounding Science Fiction.

Mr. }
Mrs. }
Miss }
Address
City Zone State

(All correspondence confidential. No salesman will call on you.) 173-A-363

Check here if eligible for Veterans' Training.

Copyright 1953 Newspaper Institute of America

“POSTULATE AN ALIEN WHO —”

Something called, for want of a better name, a “flying saucer” exists. There have been too many reports, from too many sources, under too many differing types of condition, to hold that no object other than standard, well-known terrestrial phenomena are behind them.

The problem, once the existence of a Something has been accepted, would be to explain the behavior pattern manifested by those flying Somethings. I'd like to postulate, for discussion, an alien, with one special characteristic. First, let's review the behavior pattern observed.

Practically all the sightings have been in the area of the United States sometimes called the “square states.” They have been seen very infrequently around the major metropolitan areas of the United States, and very infrequently, if at all, in the areas of Europe and Russia. Their marked tendency to confine their operations to the western United States was, in fact, a factor

which made me feel, for a long time, that they were a United States military secret weapon. I was at a loss to explain why an alien, an extraterrestrial, would show such marked preference for that particular geographic area.

Let's make a postulate: That the extraterrestrial pilots of the flying Somethings are members of a telepathically sensitive race.

What data we have on human telepathic experience indicates that it is one of those receptive senses which, like the nose and the ears, does not require conscious attention for its operation; it operates of itself. Equally, it can't be shut off, ignored, at will. No matter how you dislike the odor of the garbage incinerator down the way, when the wind is right, you are made forcefully aware of it. The baby's voice, rich in harmonic distortions and high-frequency discord, can penetrate the soundest determination to not hear it.

Now let's consider the alien pilot of a flying saucer coming in over New York City. The reek of human uncertainty, conflict, dissatisfaction, of pressure and paranoia, of neurosis and anger suppressed, of sheer screaming tension, is something that the New Yorker is not truly aware of. He's used to it. The laboratory man who works in analysis gets so used to the stench of hydrogen sulphide that he doesn't notice it. The nose can't be turned off—but you can, in time, grow used to having the stench of the garbage incinerator. The pilot of a military bomber grows accustomed to the roar of his engines in a long flight; any continuously present sound or smell has that effect.

Baby is well designed; he doesn't cry continuously—he keeps changing the volume, pitch, harmonic content, and presence or absence of his yells in a random pattern that you can't *get* used to. Baby was specifically designed that way to make sure parents would pay attention; his characteristics are matched perfectly to the ignore-it characteristics of human adults. You can't ignore it.

But we grow so used to the tension, the pressure, of our great cities that we don't notice the constant, grinding sense of suppressed tension around us. But make a count of the proportion of relaxed, easy-looking faces you see in a ten-minute walk, vs. the proportion of scowls, or bitter, tightened lips.

And if the tensions in the great

American cities are bad—what are they in Russia? Or in Europe, where a dozen different groups are actively plotting one against the other?

Postulate a telepathically sensitive alien, who was directly exposed to those tensions. Would such an entity choose to linger near our big cities? Or over Europe or Russia?

Where in the world would such an intelligent being go?

The South Seas have a fairly low tension, I imagine. So do many parts of Central Africa, or Antarctica. Central Tibet and Central Australia, likewise, have low tension indexes—there being practically no one there to have tensions. The tensions are also low in interplanetary space, I imagine—but that type of low-tension area is also low on information or understandings. The South Sea Islander doesn't have much in the way of technical culture—he doesn't represent the inhabitants of the planet Earth too well. If you're studying a planet's culture, it's futile to study its lowest levels, and consider that an adequate sample.

Rather, it is necessary to find an area where the technical culture is at a maximum, and, if you're telepathically sensitive, where the reek of tension is lowest.

Of all the areas of Earth, it occurs to me, the Square States region of this country, plus Washington and Oregon, come closest to filling the bill. The full measure of the highest cultural achievements of Mankind is available

in that area. The people have a generally friendly aspect, have far lower tension in their living, than do the high-pressure areas of New York, Chicago or Los Angeles. There's room, there, to live and breathe. To those people, it is somewhat hard to understand what the competition for a chance to take a swim on a hot summer day really can be. The coastal beaches of New Jersey lie between Philadelphia and New York; thirty million human beings are competing for a chance to enjoy the sea and sun and sand. Thirty million. The vast metropolitan area stretches almost solid for three hundred miles along the Atlantic seaboard. A structure that, in Washington or Wisconsin, would be considered a reasonable hen house, is called a "summer cottage," and sells, with its tiny piece of land near an overcrowded, undersized lake, for some three thousand dollars in the metropolitan area.

The New Yorker or Angeleno has equal difficulty recognizing the relaxation of an area where there is practically no competition for space, for sun, for light and air.

A telepathic alien, I suspect, would

be acutely aware of the difference.

However, there is an additional and interesting postulate to consider with respect to a telepathic being. It has long been observed that it does not pay to kick yourself in the shins. If your left leg is angry at your right foot, it is not wise to kick the right shin. The two are interconnected, and the result is not very satisfactory.

What happens if a fully telepathic being injures another living, intelligent entity? If he does something to another intelligent being that damages or destroys that other's self-respect, integrity, or courage to grow and develop?

Do you want the *answers* to all your problems? Or the satisfaction of having made those answers your own by earning them? By building them by your own efforts and understandings?

It would definitely be a tough job for a telepathic—and therefore immensely, deeply understanding—entity to decide how to handle the problem of another intelligent species that understood itself least of all the things it was aware of!

The Editor.



UN-MAN

BY POUL ANDERSON

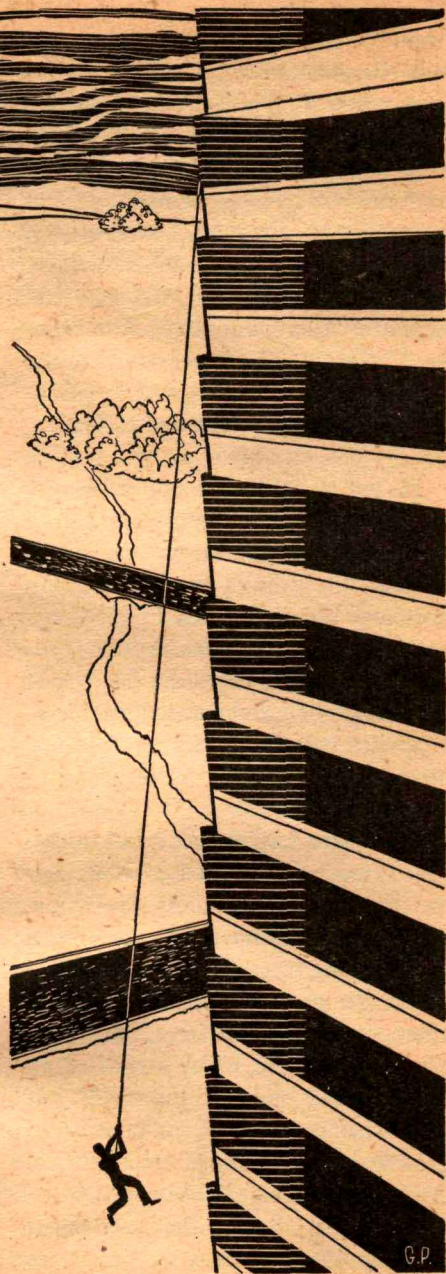
The Un-Man, like an idea, could be killed many times—and still lived vigorously and actively. But to live at all, he had to be vigorous and active!

Illustrated by Pawelka

I.

They were gone, their boat whispering into the sky with all six of them aboard. Donner had watched them from his balcony—he had chosen the apartment carefully with a view to such features—as they walked out on the landing flange and entered the shell. Now their place was vacant and it was time for him to get busy.

For a moment hesitation was in



him. He had waited many days for this chance, but a man does not willingly enter a potential trap. His eyes strayed to the picture on his desk. The darkly beautiful young woman and the child in her arms seemed to be looking at him, her lips were parted as if she were about to speak. He wanted to press the button that animated the film, but didn't quite dare. Gently, his finger stroked the glass over her cheek.

"Jeanne," he whispered. "Jeanne, honey."

He got to work. His colorful lounging pajamas were exchanged for a gray outfit that would be inconspicuous against the walls of the building. An ordinary featureless mask, its sheen carefully dulled to nonreflection, covered his face. He clipped a flat box of tools to his belt and painted his fingertips with collodion. Picking up a reel of cord in one hand, he returned to the balcony.

From here, two hundred and thirty-four stories up, he had a wide view of the Illinois plain. As far as he could see, the land rolled green with corn, hazing into a far horizon out of which the great sky lifted. Here and there, a clump of trees had been planted, and the white streak of an old highway crossed the field, but otherwise it was one immensity of growth. The holdings of Midwest Agricultural reached beyond sight.

On either hand, the apartment building lifted sheer from the trees

and gardens of its park. Two miles long, a city in its own right, a mountain of walls and windows, the unit dominated the plain, sweeping heavenward in a magnificent arrogance that ended sixty-six stories above Donner's flat. Through the light prairie wind that fluttered his garments, the man could hear a low unending hum, muted pulsing of machines and life—the building, itself like a giant organism.

There were no other humans in sight. The balconies were so designed as to screen the users from view of neighbors on the same level, and anyone in the park would find his upward glance blocked by trees. A few brilliant points of light in the sky were airboats, but that didn't matter.

Donner fastened his reel to the edge of the balcony and took the end of the cord in his fingers. For still another moment he stood, letting the sunlight and wind pour over him, filling his eyes with the reaching plains and the high white-clouded heaven.

He was a tall man, his apparent height reduced by the width of shoulders and chest, a curious rippling grace in his movements. His naturally yellow hair had been dyed brown, and contact lenses made his blue eyes dark, but otherwise there hadn't been much done to his face—the broad forehead, high cheekbones, square jaw, and jutting nose were the same. He smiled wryly behind the blank

mask, took a deep breath, and swung himself over the balcony rail.

The cord unwound noiselessly, bearing him down past level after level. There was a risk involved in this daylight burglary—someone might happen to glance around the side wall of a balcony and spot him, and even the custom of privacy would hardly keep them from notifying the unit police. But the six he was after didn't time their simultaneous departures for his convenience.

The looming façade slid past, blurred a little by the speed of his descent. One, two, three—He counted as he went by, and at the eighth story down tugged the cord with his free hand. The reel braked and he hung in midair.

A long and empty way down—He grinned and began to swing himself back and forth, increasing the amplitude of each arc until his soles were touching the unit face. On the way back, he grasped the balcony rail, just beyond the screening side wall, with his free hand. His body jerked to a stop, the impact like a blow in his muscles.

Still clinging to the cord, he pulled himself one-armed past the screen, over the rail, and onto the balcony floor. Under the gray tunic and the sweating skin, his sinews felt as if they were about to crack. He grunted with relief when he stood freely, tied the cord to the rail, and unclipped his tool case.

The needle of his electronic detector flickered. So—there was an alarm hooked to the door leading in from the balcony. Donner traced it with care, located a wire, and cut it. Pulling a small torch from his kit, he approached the door. Beyond its transparent plastic, the rooms lay quiet—a conventional arrangement of furniture, but it had a waiting quality over it.

Imagination, thought Donner impatiently, and cut the lock from the door. As he entered, the auto-cleaner sensed his presence and its dust-sucking wind whined to silence.

The man forced the lock of a desk and riffled through the papers within. One or two in code he slipped into his pocket, the rest were uninteresting. There must be more, though. Curse it, this was their regional headquarters!

His metal detector helped him about the apartment, looking for hidden safes. When he found a large mass buried in a wall, he didn't trouble with searching for the button to open it, but cut the plastic facing away. The gang would know their place had been raided, and would want to move. If they took another flat in the same building, Donner's arrangement with the superintendent would come into effect; they'd get a vacancy which had been thoughtfully provided with all the spy apparatus he could install. The man grinned again.

Steel gleamed at him through the

scorched and melted wall. It was a good safe, and he hadn't time to diddle with it. He plugged in his electric drill, and the diamond head gnawed a small hole in the lock. With a hypodermic he inserted a few cubic centimeters of levinite, and touched it off by a UHF beam. The lock jangled to ruin, and Donner opened the door.

He had only time to see the stet-gun within, and grasp the terrible fact of its existence. Then it spat three needles into his chest, and he whirled down into a roaring darkness.

II.

Once or twice he had begun to waken, stirring dimly toward light, and the jab of a needle had thrust him back. Now, as his head slowly cleared, they let him alone. And that was worse.

Donner retched and tried to move. His body sagged against straps that held him fast in his chair. Vision blurred in a huge nauseous ache, the six who stood watching him were a ripple of fever-dream against an unquiet shadow.

"He's coming around," said the thin man unnecessarily.

The heavy-set, gray-haired man in the conservative blue tunic glanced at his timepiece. "Pretty fast, considering how he was dosed. Healthy specimen."

Donner mumbled. The taste of vomit was bitter in his mouth. "Give

him some water," said the bearded man.

The thin man's face was dead white against the shifting, blurring darkness of the room, and there was a fever in his eyes. "He doesn't rate it," he snarled "the— Un-man!"

"Get him some water," said the gray-haired one quietly. The skeletal younger slouched sulkily over to a chipped basin with an old-fashioned tap and drew a glassful.

Donner swallowed it greedily, letting it quench some of the dry fire in his throat and belly. The bearded man approached with a hypo.

"Stimulant," he explained. "Bring you around faster." It bit into Donner's arm and he felt his heartbeat quicken. His head was still a keen pulsing pain, but his eyes steadied and he looked at the others with returning clarity.

"We weren't altogether careless," said the heavy-set man. "That stet-gun was set to needle anybody who opened the safe without pressing the right button first. And, of course, a radio signal was emitted which brought us back in a hurry. We've kept you unconscious till now."

Donner looked around him. The room was bare, thick with the dust and cobwebs of many years, a few pieces of old-style wooden furniture crouched in ugliness against the cracked plaster walls. There was a single window, its broken glass panes stuffed with rags, dirt so thick on it

that he could not be sure if there was daylight outside. But it was probably after dark. The only illumination within was from a single fluoro in a stand on the table.

He must be in Chicago, Donner decided through a wave of sickness. One of the vast moldering regions that encompassed the inhabited parts of the dying city—deserted, not worth destroying as yet, the lair of rats and decay. Sooner or later, some agricultural outfit would buy up the nominal title from the government which had condemned the place and raze what had been spared by fire and rot. But it hadn't happened yet, and the empty slum was a good hideaway for—anybody.

Donner thought of those miles of ruinous buildings, wrapped in night, looming hollow against a vacant sky—dulled echoes in the cracked and grass-grown streets, the weary creak of a joist, the swift patter of feet and a glare of eyes from the thick dark, menace and loneliness farther than he could run.

Alone, alone. He was more alone here than in the outermost reaches of space—alone in darkness with his enemies ringing him in and death waiting behind the shadows. They were going to kill him. He knew starkly that he was going to die, and the thought was a surging pain.

Jeanne, Jeanne, my darling.

"You were registered at the unit as Bart Roberts," said the woman

crisply. She was thin, almost as thin as the bitter-eyed young man beside her. The face was sharp and hungry, the hair close cropped, the voice harsh with purpose. "But your ID tattoo is a fake—it's a dye that comes off with acid. We got your thumbprint and that number on a check and called the bank central like in an ordinary verification, and the robofile said yes, that was Bart Roberts and the account was all right." She leaned forward, her face straining against the blur of night, and spat it at him: "Who are you really? Only a secret service man could get by with that kind of fake. Whose service are you in?"

"It's obvious, isn't it?" snapped the thin man. "He's not American Security. We know that. So he must be an Un-man."

The way he said the last word made it an ugly, inhuman sound. "*The Un-man!*" he repeated.

"Our great enemy," said the heavy-set one thoughtfully. "*The Un-man*—not just an ordinary operator, with human limitations, but the great and secret one who's made so much trouble for us."

He cocked his gray head and stared at Donner. "It fits what fragmentary descriptions we have," he went on. "But then, the U.N. boys can do a lot with surgery and cosmetics, can't they? And *the Un-man* has been killed several times. An operator was bagged in Hong Kong only last month

which the killer swore must be our enemy—he said nobody else could have led them such a chase.”

That was most likely Weinberger, thought Donner. An immense weariness settled on him. They were so few, so desperately few, and one by one the Brothers went down into darkness. He was next, and after him—

“What I can’t understand,” said a fifth man—Donner recognized him as Colonel Samsey of the American Guard—“is why, if the U.N. Secret Service does have a corps of . . . uh . . . supermen, it should bother to disguise them to look all alike. So that we’ll think we’re dealing with an immortal?” He chuckled grimly. “Surely they don’t expect us to be rattled by that!”

“Not supermen,” said the gray-haired one. “Enormously able, yes, but the Un-men aren’t infallible—as witness this one.” He stood before Donner, his legs spread and his hands on his hips. “Suppose you start talking. Tell us about yourself.”

“I can tell you about your own selves,” answered Donner. His tongue felt thick and dry, but the acceptance of death made him, all at once, immensely steady. “You are Roger Wade, president of Brain Tools, Incorporated, and a prominent supporter of the Americanist Party.” To the woman: “You are Marta Jennings, worker for the Party on a full-time basis. Your secretary, Mr.

Wade”—his eyes roved to the gaunt young man—“is Rodney Borrow, Exogene Number—”

“Don’t call me that!” Cursing, Borrow lunged at Donner. He clawed like a woman. When Samsey and the bearded man dragged him away, his face was death-white and he dribbled at the mouth.

“And the experiment was a failure,” taunted Donner cruelly.

“Enough!” Wade slapped the prisoner, a ringing open-handed buffet. “We want to know something new, and there isn’t much time. You are, of course, immunized against truth drugs—Dr. Lewin’s tests have already confirmed that—but I assume you can still feel pain.”

After a moment, he added quietly: “We aren’t fiends. You know that we’re—patriots.” *Working with the nationalists of a dozen other countries!* thought Donner with a terrible sardonicism. “We don’t want to hurt or kill unnecessarily.”

“But first we want your real identity,” said the bearded man, Lewin. “Then your background of information about us, the future plans of your chief, and so on. However, it will be sufficient for now if you answer a few questions pertaining to yourself—residence and so on.”

Oh, yes, thought Donner, the weariness like a monstrous weight on his soul. *That’ll do. Because then they’ll find Jeanne and Bobby, and bring them here, and—*

Lewin wheeled forth a lie detector. "Naturally, we don't want our time wasted by false leads," he said.

"It won't be," replied Donner. "I'm not going to say anything."

Lewin nodded, unsurprised, and brought out another machine. "This one generates low-frequency, low-voltage current," he remarked. "Quite painful. I don't think your will can hold out very long. If it does, we can always try prefrontal lobotomy; you won't have inhibitions then. But we'll give you a chance with this first."

He adjusted the electrodes on Donner's skin. Borrow licked his lips with a dreadful hunger.

Donner tried to smile, but his mouth felt stiff. The sixth man, who looked like a foreigner somehow, went out of the room.

There was a tiny receiver in Donner's skull, behind the right mastoid. It could only pick up messages of a special wave form, but it had its silencing uses, too. After all, electric torture is a common form of inquisition, and very hard to bear.

He thought of Jeanne, and of Bobby, and of the Brotherhood. He wished that the last air he was to breathe wasn't stale and dusty.

The current tore him with a convulsive anguish. His muscles jerked against the straps and he cried out. Then the sensitized communicator blew up in a jagged hail of splinters, releasing a small puff of fluorine.

The image Donner carried into death was that of Jeanne, smiling and bidding him welcome home.

III.

Barney Rosenberg drove along a dim, rutted trail toward the sheer loom of the escarpment. Around its corner lay Drygulch. But he wasn't hurrying. As he got closer, he eased the throttle of his sandcat and the engine's purr became almost inaudible.

Leaning back in his seat, he looked through the tiny plastiglass cab at the Martian landscape. It was hard to understand that he would never see it again.

Even here, five miles or so from the colony, there was no trace of man save himself and his engine and the blurred track through sand and bush. Men had come to Mars on wings of fire, they had hammered out their cities with a clangorous brawl of life, mined and smelted and begun their ranches, trekked in sandcats and air-suits from the polar bogs to the equatorial scrubwoods—and still they had left no real sign of their passing. Not yet. Here a tin can or a broken tool, there a mummified corpse in the wreck of a burst seal-tent, but sand and loneliness drifted over them, night and cold and forgetfulness. Mars was too old and strange for thirty years of man to matter.

The desert stretched away to Rosen-

berg's left, tumbling in steep drifts of sand from the naked painted hills. Off to the sharply curving horizon the desert marched, an iron barrenness of red and brown and tawny yellow, knife-edged shadows and a weird vicious shimmer of pale sunlight. Here and there a crag lifted, harsh with mineral color, worn by the passing of ages and thin gnawing wind to a fluted fantasy. A sandstorm was blowing a few miles off, a scud of dust hissing over stone, stirring the low gray-green brush to a sibilant murmur of dry branches. On his right the hills rose bare and steep, streaked with blue and green of copper ores, gashed and scored and murmurous with wind. He saw life, the dusty thornbushes and the high gaunt cactoids and a flicker of movement as a tiny leaper fled. In one of the precipices, a series of carved, time-blurred steps went up to the ruin of a cliff dwelling abandoned—how long ago?

Overhead the sky was enormous, a reaching immensity of deep greenish blue-violet, incredibly high and cold and remote. The stars glittered faintly in its abyss, the tiny hurtling speck of a moon less bright than they. A shrunken sun stood in a living glory of corona and zodiacal light, the winged disk of royal Egypt lifting over Mars. Near the horizon a thin layer of ice crystals caught the luminance in a chilly sparkle. There was wind, Rosenberg knew, a whimpering ghost of wind blowing through the

bitter remnant of atmosphere, but he couldn't hear it through the heavy plastiglass and somehow he felt that fact as a deeper isolation.

It was a cruel world, this Mars, a world of cold and ruin and soaring scornful emptiness, a world that broke men's hearts and drained their lives from them—rainless, oceanless, heatless, kindless, where the great wheel of the stars swung through a desert of millennia, where the days cried with wind and the nights rang and groaned with the riving frost. It was a world of waste and mystery, a niggard world where a man ate starvation and drank thirst and finally went down in darkness. Men trudged through unending miles, toil and loneliness and quiet creeping fear, sweated and gasped, cursed the planet and wept for the dead and snatched at warmth and life in the drab colony towns. *It's all right when you find yourself talking to the sandbuggers—but when they start talking back, it's time to go home.*

And yet— And yet— The huge gray sweep of the polar moors, thin faint skirl of wind, sunlight shattered to a million diamond shards on the hoarfrost cap; the cloven tremendousness of Rasmussen Gorge, a tumbling sculptured wilderness of fairy stone, uncounted shifting hues of incredible color and fleeting shadow; the high cold night of stars, fantastically brilliant constellations marching over a crystal heaven, a silence so great you

thought you could hear God speaking far out over the universe; the delicate dayflowers of the Syrtis forests, loveliness blooming with the bitter dawn and dying in the swift sunset; traveling and searching, rare triumph and shaking defeat, but always the quest and the comradeship. Oh, yes, Mars was savage to her lovers, but she gave them of her strange beauty and they would not forget her while they lived.

Maybe Stef was the lucky one, thought Rosenberg. He died here.

He guided the sandcat over a razorback ridge. For a moment he paused, looking at the broad valley beyond. He hadn't been to Drygulch for a couple of years—that'd be almost four Earth-years, he remembered.

The town, half underground below its domed roof, hadn't changed much outwardly, but the plantations had doubled their area. The genetic engineers were doing good work, adapting terrestrial food plants to Mars and Martian plants to the needs of humans. The colonies were already self-supporting with regard to essentials, as they had to be considering the expense of freight from Earth. But they still hadn't developed a decent meat animal, that part of the diet had to come from yeast-culture factories in the towns and nobody saw a beefsteak on Mars. *But we'll have that too, one of these years.*

A worn-out world, a stern and bit-

ter and grudging world, but it was being tamed. Already the new generation was being born. There wasn't much fresh immigration from Earth these days, but man was unshakably rooted here. Some day he'd get around to modifying the atmosphere and weather till humans could walk free and unclothed over the rusty hills—but that wouldn't happen till he, Rosenberg, was dead, and in an obscure way he was glad of it.

The cat's supercharging pumps roared, supplementing tanked oxygen with Martian air for the hungry Diesel as the man steered it along the precarious trail. It was terribly thin, that air, but its oxygen was mostly ozone and that helped. Passing a thorium mine, Rosenberg scowled. The existence of fissionables was the main reason for planting colonies here in the first place, but they should be saved for Mars.

Well, I'm not really a Martian any longer. I'll be an Earthman again soon. You have to die on Mars, like Stef, and give your body back to the Martian land, before you altogether belong here.

The trail from the mine became broad and hard-packed enough to be called a road. There was other traffic now, streaming from all corners—a loaded ore-car, a farmer coming in with a truckful of harvested crops, a survey expedition returning with maps and specimens. Rosenberg waved to the drivers. They were of many nationalities, but except for the Pilgrims



that didn't matter. Here they were simply humans. He hoped the U.N. would get around to internationalizing the planets soon.

There was a flag on a tall staff outside the town, the Stars and Stripes stiff against an alien sky. It was of metal—it had to be, in that murderous corroding atmosphere—and Rosenberg imagined that they had to repaint it pretty often. He steered past it, down a long ramp leading under the dome. He had to wait his turn at the air lock, and wondered when somebody would invent a better system of oxygen conservation. New experiments in submolar mechanics were a promising lead.

He left his cat in the underground garage, with word to the attendant that another man, its purchaser, would pick it up later. There was an odd stinging in his eyes as he patted its scarred flanks. Then he took an elevator and a slideway to the housing office and arranged for a room—he had a couple of days before the *Phobos* left. A shower and a change of clothes were sheer luxury and he reveled in them. He didn't feel much desire for the co-operative taverns and pleasure joints, so he called up Doc Fieri instead.

The physician's round face beamed at him in the plate. "Barney, you old sandbugger! When'd you get in?"

"Just now. Can I come up?"

"Yeah, sure. Nothing doing at the office . . . that is, I've got company, but he won't stay long. Come right on over."

Rosenberg took a remembered route through crowded hallways and elevators till he reached the door he wanted. He knocked—Drygulch's imports and its own manufactories needed other things more urgently than call and recorder circuits. "Come in!" bawled the voice.

Rosenberg entered the cluttered room, a small leathery man with gray-sprinkled hair and a beaky nose, and Fieri pumped his hand enthusiastically. The guest stood rigid in the background, a lean ascetic figure in black—a Pilgrim. Rosenberg stiffened inwardly. He didn't like that sort, puritan fanatics from the Years of Madness who'd gone to Mars so they could be unhappy in freedom. Rosenberg didn't care what a man's religion was, but nobody on Mars had a right to be so clannish and to deny co-operation as much as New Jerusalem. However, he shook hands politely, relishing the Pilgrim's ill-concealed distaste—they were anti-Semitic, too.

"This is Dr. Morton," explained Fieri. "He heard of my research and came around to inquire about it."

"Most interesting," said the stranger. "And most promising, too. It will mean a great deal to Martian colonization."

"And surgery and biological research everywhere," put in Fieri. Pride was bursting from him.

"What is it, Doc?" asked Rosenberg, as expected.

"Suspended animation," said Fieri.

"Hm-m-m?"

"Uh-huh. You see, in what little spare time I have, I've puttered around with Martian biochemistry. Fascinating subject, and unearthly in two meanings of the word. We've nothing like it at home—don't need it. Hibernation and estivation approximate it, of course."

"Um-m-m—yes." Rosenberg rubbed his chin. "I know what you mean. Everybody does. The way so many plants and animals needing heat for their metabolisms can curl up and 'sleep' through the nights, or even through the whole winter. Or they can survive prolonged droughts that way, too." He chuckled. "Comparative matter, of course. Mars is in a state of permanent drought, by Earthly standards."

"And you say, Dr. Fieri, that the natives can do it also?" asked Morton.

"Yes. Even they, with a quite highly developed nervous system, can apparently 'sleep' through such spells of cold or famine. I had to rely on explorers' fragmentary reports for that datum—there are so few natives left, and they're so shy and secretive. But last year I did finally get a look at one in such a condition. It was incredible—

respiration was undetectable, the heart-beat almost so, the encephalograph showed only a very slow, steady pulse. But I got blood and tissue samples, and was able to analyze and compare them with secretions from other life forms in suspension."

"I thought even Martians' blood would freeze in a winter night," said Rosenberg.

"It does. The freezing point is much lower than with human blood, but not so low that it can't freeze at all. However, in suspension there's a whole series of enzymes released. One of them, dissolved in the bloodstream, changes the characteristics of the plasma. When ice crystals form, they're *more* dense than the liquid, therefore cell walls aren't ruptured and the organism survives. Moreover, a slow circulation of oxygen-bearing radicals and nutrient solutions takes place even through the ice, apparently by some process analogous to ion exchange. Not much, but enough to keep the organism alive and undamaged. Heat, a sufficient temperature, causes the breakdown of these secretions and the animal or plant revives. In the case of suspension to escape thirst or famine, the process is somewhat different, of course, though the same basic enzymes are involved."

Fieri laughed triumphantly and slapped a heap of papers on his desk. "Here are my notes. The work isn't complete yet, I'm not quite ready to publish, but it's more or less a matter of detail

now." A Nobel Prize glittered in his eye.

Morton skimmed through the manuscript. "Very interesting," he murmured. His lean, close-cropped head bent over a structural formula. "The physical chemistry of this material must be weird."

"It is, Morton, it is." Fieri grinned.

"Hm-m-m—do you mind if I borrow this to read? As I mentioned earlier, I believe my lab at New Jerusalem could carry out some of these analyses for you."

"That'll be fine. Tell you what, I'll make up a stat of this whole mess for you. I'll have it ready by tomorrow."

"Thank you." Morton smiled, though it seemed to hurt his face. "This will be quite a surprise, I'll warrant. You haven't told anyone else?"

"Oh, I've mentioned it around, of course, but you're the first person who's asked for the technical details. Everybody's too busy with their own work on Mars. But it'll knock their eye out back on Earth. They've been looking for something like this ever since . . . since the Sleeping Beauty story . . . and here's the first way to achieve it."

"I'd like to read this too, Doc," said Rosenberg.

"Are you a biochemist?" asked Morton.

"Well, I know enough biology and chemistry to get by, and I'll have leisure to wade through this before my ship blasts."

"Sure, Barney," said Fieri. "And do me a favor, will you? When you get home, tell old Summers at Cambridge . . . England, that is . . . about it. He's their big biochemist, and he always said I was one of his brighter pupils and shouldn't have switched over to medicine. I'm a modest cuss, huh? But yet, it's not everybody who grabs onto something as big as this!"

Morton's pale eyes lifted to Rosenberg's. "So you are returning to Earth?" he asked.

"Yeah. The *Phobos*." He felt he had to explain, that he didn't want the Pilgrim to think he was running out. "More or less doctor's orders, you understand. My helmet cracked open in a fall last year, and before I could slap a patch on I had a beautiful case of the bends, plus the low pressure and the cold and the ozone raising the very devil with my lungs." Rosenberg shrugged, and his smile was bitter. "I suppose I'm fortunate to be alive. At least I have enough credit saved to retire. But I'm just not strong enough to continue working on Mars, and it's not the sort of place where you can loaf and remain sane."

"I see. It is a shame. When will you be on Earth, then?"

"Couple of months. The *Phobos* goes orbital most of the way. Do I look like I could afford an acceleration passage?" Rosenberg turned to Fieri. "Doc, will there be any other old sanders coming home this trip?"

"'Fraid not. You know there are

darn few who retire from Mars to Earth—they die first. You're one of the lucky ones."

"A lonesome trip, then. Well, I suppose I'll survive it."

Morton made his excuses and left. Fieri stared after him. "Odd fellow. But then, all these Pilgrims are. They're anti-almost everything. He's competent, though, and I'm glad he can tackle some of those analyses for me." He slapped Rosenberg's shoulder. "But forget it, old man! Cheer up and come along with me for a beer. Once you're stretched out on those warm white Florida sands, with blue sky and blue sea and luscious blondes walking by, I guarantee you won't miss Mars."

"Maybe not." Rosenberg looked unhappily at the floor. "It's never been the same since Stef died. I didn't realize how much he'd meant to me till I'd buried him and gone on by myself."

"He meant a lot to everyone, Barney. He was one of those people who seem to fill the world with life, wherever they are. Let's see—he was about sixty when he died, wasn't he? I saw him shortly before, and he could still drink any two men under the table, and all the girls were still adoring him."

"Yeah. He was my best friend, I suppose. We tramped Earth and the planets together for fifteen years." Rosenberg smiled. "Funny thing, friendship. It has nothing to do with

the love of women—which is why they never understand it. Stef and I didn't even talk much. It wasn't needed. The last five years have been pretty empty without him."

"He died in a cave-in, didn't he?"

"Yes. We were exploring up near the Sawtooths, hunting a uranium lode. Our diggings collapsed; he held that toppling roof up with his shoulders and yelled at me to scramble out—then before he could get clear, it came down and burst his helmet open. I buried him on a hill, under a cairn, looking out over the desert. He was always a friend of high places."

"Yes . . . well, thinking about Stefan Rostomily won't help him or us now. Let's go get that beer, shall we?"

IV.

The shrilling within his head brought Norbert Naysmith to full awareness with a savage force. His arm jerked, and the brush streaked a yellow line across his canvas.

"Naysmith!" The voice rattled harshly in his skull. "Report to Prior at Frisco Unit. Urgent. Martin Donner has disappeared, presumed dead. You're on his job now. Hop to it, boy."

For a moment Naysmith didn't grasp the name. He'd never met anyone called Donner. Then—yes, that was on the list, Donner was one of the Brotherhood. And dead now.

Dead—He had never seen Martin Donner, and yet he knew the man with

an intimacy no two humans had realized before the Brothers came. Sharp in his mind rose the picture of the dead man, smiling a characteristic slow smile, sprawled back in a relaxer with a glass of Scotch in one strong blun-fingered hand. The Brothers were all partial to Scotch, thought Naysmith with a twisting sadness. And Donner had been a mech-volley fan, and had played good chess, read a lot and sometimes quoted Shakespeare, tinkered with machinery, probably had a small collection of guns—

Dead. Sprawled sightlessly somewhere on the turning planet, his muscles stiff, his body already devouring itself in proteolysis, his brain darkened—withdrawn into the great night, and leaving an irreparable gap in the thin tight-drawn line of the Brotherhood.

"You might pick up a newscast on your way," said the voice in his head conversationally. "It's hot stuff."

Naysmith's eyes focused on his painting. It was shaping up to be a good one. He had been experimenting with techniques, and this latest caught the wide sunlit dazzle of California beach, the long creaming swell of waves, the hot cloudless sky and the thin harsh grass and the tawny-skinned woman who sprawled on the sand. Why did they have to call him just now?

"O.K., Sofie," he said with resignation. "That's all. I've got to get back."

The sun-browned woman rolled over on one elbow and looked at him.

"What the devil?" she asked. "We've only been here three hours. The day's hardly begun."

"It's gone far enough, I'm afraid." Naysmith began putting away his brushes. "Home to civilization."

"But I don't want to!"

"What has that got to do with it?" snorted the man. *Treat 'em rough and tell 'em nothing, and they'll come running. These modern women aren't as emancipated as they think.* He folded his easel.

"But why?" she cried, half getting up.

"I have an appointment this afternoon." Naysmith strode down the beach toward the trail. After a moment, Sofie followed.

"You didn't tell me that," she protested.

"You didn't ask me," he said. He added a "Sorry" that was no apology at all.

There weren't many others on the beach, and the parking lot was relatively uncluttered. Naysmith palmed the door of his boat and it opened for him. He put a beret rakishly atop his sun-bleached yellow hair, and entered the boat. Sofie followed.

The ovoid shell slipped skyward on murmuring jets. "I'll drop you off at your place," said Naysmith. "Some other time, huh?"

She remained sulkily silent. They had met accidentally a week before, in a bar. Naysmith was officially a cyber-

netic epistemologist on vacation, Sofie an engineer on the Pacific Colony project, off for a holiday from her job. It had been a pleasant interlude, and Naysmith regretted it mildly.

Still—the rising urgent pulse of excitement tensed his body and cleared the last mists of artistic preoccupation from his brain. You lived on a knife edge in the Service, you drew breath and looked at the sun and grasped after the real world with a desperate awareness of little time. None of the Brotherhood were members of the Hedonists, they were all too well-balanced for that, but inevitably they were all epicureans.

When you were trained from . . . well, from birth, even the sharpness of nearing death could be a kind of pleasure. *Besides*, thought Naysmith, *I might be one of the survivors.*

"You are a rat, you know," said Sofie.

"Squeak," said Naysmith. His face—the strange strong face of level fair brows and wide-set blue eyes, broad across the high cheekbones and in the mouth, square-jawed and crag-nosed—split in a grin that laughed with her while it laughed at her. He looked older than his twenty-five years. And she, thought Sofie with sudden tiredness, looked younger than her forty. Her people had been well off even during the Years of Hunger, she'd always been exposed to the best available biomedical techniques, and if she claimed thirty few would call her a liar. But—

Naysmith fiddled with the radio. Presently a voice came out of it, he didn't bother to focus the TV.

“... The thorough investigation demanded by finance minister Arnold Besser has been promised by President Lopez. In a prepared statement, the president said: ‘The rest of the ministry, like myself, are frankly inclined to discredit this accusation and believe that the Chinese government is mistaken. However, its serious nature—’”

“Lopez, eh? The U.N. president himself,” murmured Naysmith. “That means the accusation has been made officially now.”

“What accusation?” asked the woman. “I haven't heard a 'cast for a week.”

“The Chinese government was going to lodge charges that the assassination of Kwang-ti was done by U.N. secret agents,” said Naysmith.

“Why, that's ridiculous!” she gasped. “The *U.N.*?” She shook her dark head. “They haven't the—right. The U.N. agents, I mean. Kwang-ti was a menace, yes, but assassination! I don't believe it.”

“Just think what the anti-U.N. factions all over the Solar System, including our own Americanists, are going to make of this,” said Naysmith. “Right on top of charges of corruption comes one of murder!”

“Turn it off,” she said. “It's too horrible.”

“These are horrible times, Sofie.”

“I thought they were getting bet-

ter.” She shuddered. “I remember the tail-end of the Years of Hunger, and then the Years of Madness, and the Socialist Depression—people in rags, starving, you could see their bones—and a riot once, and the marching uniforms, and the great craters— No! The U.N.'s like a dam against all that hell—it *can't* break!”

Naysmith put the boat on automatic and comforted her. After all, anyone loyal to the U.N. deserved a little consideration.

Especially in view of the suppressed fact that the Chinese charge was absolutely true.

He dropped the woman off at her house, a small prefab in one of the colonies, and made vague promises about looking her up again. Then he opened the jets fully and streaked north toward Frisco Unit.

V.

There was a lot of traffic around the great building, and his autopilot was kept busy bringing him in. Naysmith slipped a mantle over his tunic and a conventional half-mask over his face, the latter less from politeness than as a disguise. He didn't think he was being watched, but you were never sure. American Security was quite efficient.

If ever wheels turned within wheels, he thought sardonically, modern American politics did the spinning. The government was officially Labor and pro-U.N., and was gradually being

taken over by its sociodynamicists, who were even more in favor of world federation. However, the conservatives of all stripes, from the mildly socialist Republicans to the extreme Americanists, had enough seats in Congress and enough power generally to exert a potent influence. Among other things, the conservative coalition had prevented the abrogation of the Department of Security, and Hessling, its chief, was known to have Americanist leanings. So there were at least a goodly number of S-men out after "foreign agents"—which included Unmen.

Fourre had his own agents in American Security, of course. It was largely due to their efforts that the American Brothers had false IDs and that the whole tremendous fact of the Brotherhood had remained secret. But some day, thought Naysmith, the story would come out—and then the heavens would fall.

So thin a knife edge, so deep an abyss of chaos and ruin—society was mad, humanity was a race of insane, and the few who strove to build stability were working against shattering odds. *Sofie was right. The U.N. is a dike, holding back a sea of radioactive blood from the lands of men. And I, thought Naysmith wryly, seem to be the little boy with his finger in the dike.*

His boat landed on the downward ramp and rolled into the echoing vastness of the unit garage. He didn't quite dare land on Prior's flange. A mechanic

tagged the vehicle, gave Naysmith a receipt, and guided him toward an elevator. It was an express, bearing him swiftly past the lower levels of shops, offices, service establishments, and places of education and entertainment, up to the residential stories. Naysmith stood in a crowd of humans, most of them masked, and waited for his stop. No one spoke to anyone else, the custom of privacy had become too ingrained. He was just as glad of that.

On Prior's level, the hundred and seventh, he stepped onto the slideway going east, transferred to a northbound strip at the second corner, and rode half a mile before he came to the alcove he wanted. He got off, the rubbery floor absorbing the very slight shock, and entered the recess. When he pressed the door button, the recorded voice said: "I am sorry, Mr. Prior is not at home. Do you wish to record a message?"

"Shut up and let me in," said Naysmith.

The code sentence activated the door, which opened for him. He stepped into a simply furnished vestibule as the door chimed. Prior's voice came over the intercom: "Naysmith?"

"The same."

"Come on in, then. Living room."

Naysmith hung up his mask and mantle, slipped off his sandals, and went down the hall. The floor was warm and resilient under his bare feet, like living flesh. Beyond another

door that swung aside was the living room, also furnished with a bachelor austerity. Prior was a lone wolf by nature, belonging to no clubs. His official job was semantic analyst for a large trading outfit; it gave him a lot of free time for his U.N. activities, plus a good excuse for traveling anywhere in the Solar System.

Naysmith's eyes flickered over the dark face of his co-worker—Prior was not a Brother, though he knew of the band—and rested on the man who lay in the adjoining relaxer. "Are you here, chief?" He whistled. "Then it must be really big."

"Take off your clothes and get some sun lamp," invited Prior, waving his eternal cigarette at a relaxer. "I'll try to scare up some Scotch for you."

"Why does the Brotherhood always have to drink Scotch?" grumbled Etienne Fourre. "Your padded expense accounts eat up half my budget. Or drink it up, I should say."

He was squat and square and powerful, and at eighty was still more alive than most boys. Small black eyes glistened in a face that seemed carved from scarred and pitted rock; his voice was a bass rumble from the deep shaggy chest, its English hardly accented at all. Geriatrics could only account for some of the vitality that lay like a coiled quivering spring in him, for the entire battery of diet, exercise, and chemistry has to be applied almost from birth to give maximum effect and his youth antedated the

science. *But he'll probably outlive us all*, thought Naysmith.

There was something of the fanatic about Etienne Fourre. He was a child of war whose most relentless battle had become one against war itself. As a young man he had been in the French Resistance of World War II. Later he had been high in the Western liaison with the European undergrounds of World War-III, entering the occupied and devastated lands himself on his dark missions. He had fought with the Liberals against the neofascists in the Years of Hunger and with the gendarmerie against the Atomists in the Years of Madness and with U.N. troops in the Near East where his spy system had been a major factor in suppressing the Great Jihad. He had accepted the head of the secret service division of the U.N. Inspectorate after the Conference of Rio revised the charter and had proceeded quietly to engineer the coup which overthrew the anti-U.N. government of Argentina. Later his men had put the finger on Kwang-ti's faked revolution in the Republic of Mongolia, thus ending that conquest-from-within scheme; and he was ultimately the one responsible for the Chinese dictator's assassination. The Brotherhood was his idea from the beginning, his child and his instrument.

Such a man, thought Naysmith, would in earlier days have stood behind the stake and lash of an Inquisition, would have marched at Crom-

well's side and carried out the Irish massacres, would have helped set up world-wide Communism—a sternly religious man, for all his mordant atheism, a living sword which needed a war. *Thank God he's on our side!*

“All right, what's the story?” asked the Un-man aloud.

“How long since you were on a Service job?” countered Fourre.

“About a year. Schumacher and I were investigating the *Arbeitspartei* in Germany—all the other German Brothers were tied up in that Austrian business, you remember, and I speak the language well enough to pass for a Rhinelander when I'm in Prussia.”

“Yes, I recall. You have been loafing long enough, my friend.” Fourre took the glass of wine offered him by Prior, sipped it, and grimaced. “*Merdel!* Won't these Californians ever give up trying?” Swinging back to Naysmith: “I am calling in the whole Brotherhood on this. I shall have to get back to Rio fast, the devil is running loose down there with those Chinese charges and I will be lucky to save our collective necks. But I have slipped up to North America to get you people organized and under way. While I am pretty sure that the leadership of our great and unknown enemy is down in Rio—probably with Besser, who is at least involved in it but has taken some very excellent precautions against assassination—and it would do no good to kill him only to have someone else

take over. At any rate, the United States is still a most important focus of anti-U.N. activity, and Donner's capture means a rapid deterioration of things here. Prior, who was Donner's contact man, tells me that he was apparently closer to spying out the enemy headquarters for this continent than any other operative. Now that Donner is gone, Prior has recommended you to succeed in his assignment.”

“Which was what?”

“I will come to that. Donner was an engineer by training. You are a cybernetic analyst, *hein?*”

“Yes, officially,” said Naysmith. “My degrees are in epistemology and communications theory, and my supposed job is basic-theoretical consultant. Troubleshooter in the realm of ideas.” He grinned. “When I get stuck, I can always refer the problem to Prior here.”

“Ah, so. You are then necessarily something of a linguist too, eh? Good. Understand, I am not choosing you for your specialty, but rather for your un-specialty. You are too old to have had the benefit of Synthesis training. Some of the younger Brothers are getting it, of course. There is a lad in Mexico, Peter Christian, whose call numbers you had better get from Prior in case you need such help.

“Meanwhile, an epistemologist or semanticist is the closest available thing to an integrating synthesist. By your knowledge of language, psychology, and the general sciences, you

should be well equipped to fit together whatever information you can obtain and derive a larger picture from them. I don't know." Fourre lit a cigar and puffed ferociously.

"Well, I can start anytime—I'm on extended leave of absence from my nominal job already," said Naysmith. "But what about this Donner? How far had he gotten, what happened to him, and so on?"

"I'll give you the background, because you'll need it," said Prior. "Martin Donner was officially adopted in Canada and, as I said, received a mechanical engineering degree there. About four years ago we had reason to think the enemy was learning that he wasn't all he seemed, so we transferred him to the States, flanged up an American ID for him and so on. Recently he was put to work investigating the Americanists. His leads were simple; he got a job with Brain Tools, Inc., which is known to be lousy with Party members. He didn't try to infiltrate the Party—we already have men in it, of course, though they haven't gotten very high—but he did snoop around, gather data, and finally put the snatch on a certain man and pumped him full of truth drug." Naysmith didn't ask what had happened to the victim—the struggle was utterly ruthless, with all history at stake. "That gave him news about the Midwestern headquarters of the conspiracy, so he went there. It was one of the big units in Illinois. He got himself an apartment

and—disappeared. That was almost two weeks ago." Prior shrugged. "He's quite certainly dead by now. If they didn't kill him themselves, he'll have found a way to suicide."

"You can give me the dossier on what Donner learned and communicated to you?" asked Naysmith.

"Yes, of course, though I don't think it'll help you much." Prior looked moodily at his glass. "You'll be pretty much on your own. I needn't add that anything goes, from privacy violation to murder, but that with the Service in such bad odor right now you'd better not leave any evidence. Your first job, though, is to approach Donner's family. You see, he was married."

"Oh?"

"I don't mean free-married, or group-married, or trial-married, or any other version," snapped Prior impatiently. "I mean *married*. Old style. One kid."

"Hm-m-m—that's not so good, is it?"

"No. Un-men really have no business marrying, and most especially the Brothers don't. However—You see the difficulties, don't you? *If* Donner is still alive, somehow, and the gang traces his ID and grabs the wife and kid, they've got a hold on him that may make him spill all he knows. No sane man is infinitely loyal to a cause."

"Well, I suppose you provided Donner with a Midwestern ID."

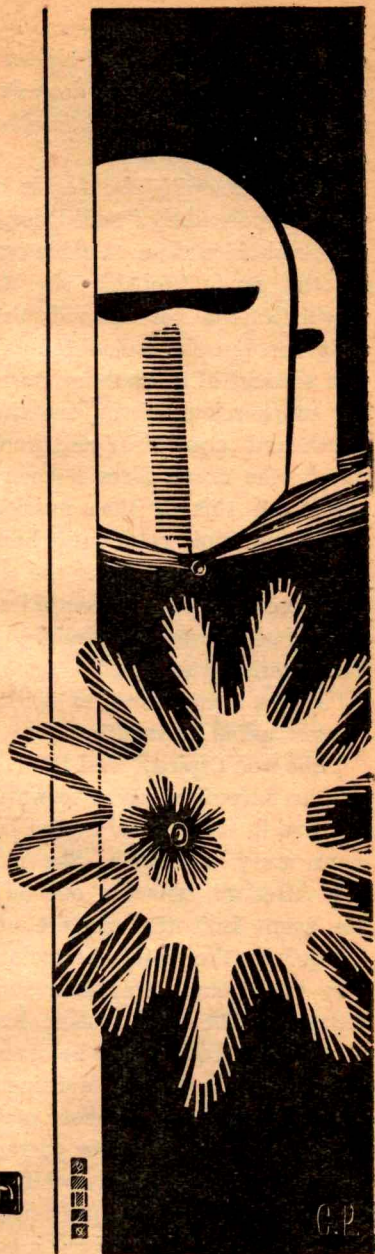
"Sure. Or rather, he used the one

we already had set up—name, fingerprints, number, all the data registered at Midwest Central. Praise Allah, we've got friends in the registry bureau! But Donner's case is bad. In previous instances where we lost a Brother, we've been able to recover the corpse or were at least sure that it was safely destroyed. Now the enemy has one complete Brother body, ready for fingerprinting, retinals, blood typing, Bertillon measurements, autopsy, and everything else they can think of. We can expect them to check that set of physical data against every ID office in the country. And when they find the same identification under different names and numbers in each and every file—things will pop."

"It will take time, of course," said Fourre. "We have put in duplicate sets of non-Brother data too, as you know; that will give them extra work to do. Nor can they be sure which set corresponds to Donner's real identity."

In spite of himself, Naysmith grinned again. "Real identity" was an incongruous term as applied to the Brotherhood. However—

"Nevertheless," went on Fourre, "there is going to be an investigation in every country on Earth and perhaps the Moon and planets. The Brotherhood is going to have to go underground, in this country at least. And just now when I have to be fighting for my service's continued existence down in Rio!"



They're closing in. We stand at bay, and the triumphant powers tighten their ring. We always knew, deep in our brains, that this day of ruin would come, and now it is upon us.

"Even assuming Donner is dead, which is more likely," said Prior, "his widow would make a valuable captive for the gang. Probably she knows very little about her husband's Service activities, but she undoubtedly has a vast amount of information buried in her subconscious—faces, snatches of overheard conversation, perhaps merely the exact dates Donner was absent on this or that mission. A skilled man could get it out of her, you know—thereby presenting the enemy detectives with any number of leads—some of which would go straight to our most cherished secrets."

"Haven't you tried to spirit her away?" asked Naysmith.

"She won't spirit," said Prior. "We sent an accredited agent to warn her she was in danger and advise her to come away with him. She refused flat. After all, how can one be sure our agent isn't the creature of the enemy? Furthermore, she took some very intelligent precautions, such as consulting the local police, leaving notes in her bankbox to be opened if she disappears without warning, and so on, which have in effect made it impossibly difficult for us to remove her against her will. If nothing else, we couldn't stand the publicity. All we've been able to do is put a couple

of men to watching her—and one of these was picked up by the cops the other day and we had quite a time springing him."

"She's got backbone," said Naysmith.

"Too much," replied Prior. "Well, you know your first assignment. Get her to go off willingly with you, hide her and the kid away somewhere, and then go underground yourself. After that, it's more or less up to you, boy."

"But how'll I persuade her to—"

"Isn't it obvious?" snapped Fourre.

It was. Naysmith grimaced. "Isn't it enough that I do your murders and robberies for you?"

VI.

Brigham City, Utah was not officially a colony, having existed long before the postwar resettlements. But it had always been a lovely town, and had converted itself almost entirely to modern layout and architecture. Naysmith had not been there before, but he felt his heart warming to it—*the same as Donner, who is dead now.*

He opened all jets and screamed at his habitual speed low above the crumbling highway. Hills and orchards lay green about him under a high clear heaven, a great oasis lifted from the wastelands by the hands of men. They had come across many-miled emptiness, those men of another day, trudging dustily by their creaking, bumping, battered wagons on the way

to the Promised Land; and he, today, sat on plastic-foam cushions in a metal shell, howling at a thousand miles an hour till the echoes thundered, but was himself fleeing the persecutors.

Local traffic control took over as he intersected the radio beam. He relaxed as much as possible, puffing a nervous cigarette while the autopilot brought him in. When the boat grounded in a side lane, he slipped a full mask over his head and resumed manually, driving.

The houses nestled in their screens of lawn and trees, the low half-underground homes of small families. Men and women, some in laboring clothes, were about on the slideways, and there were more children in sight, small bright flashes of color laughing and shouting, than was common elsewhere. The Mormon influence, Naysmith supposed. Most of the fruit-raising plantations were still privately owned small-holdings too, using cooperation to compete with the giant government-regulated agricultural combines. But there would nevertheless be a high proportion of men and women here who communicated to outside jobs by airbus—workers on the Pacific Colony project, for instance.

He reviewed Prior's file on Donner, passing the scanty items through his memory. The Brothers were always on call, but outside their own circle they were as jealous of their privacy as anyone else. It had, however, been

plain that Jeanne Donner worked at home as a mail-consultant semantic linguist—correcting manuscript of various kinds—and gave an unusual amount of personal attention to her husband and child.

Naysmith felt inwardly cold.

Here was the address. He brought the boat to a silent halt and started up the walk toward the house. Its severe modern lines and curves were softened by a great rush of morning glory, and it lay in the rustling shade of trees, and there was a broad garden behind it. That was undoubtedly Jeanne's work—Donner would have hated gardening.

Instinctively, Naysmith glanced about for Prior's watchman. Nowhere in sight—but then, a good operative wouldn't be. Perhaps that old man, white-bearded and patriarchal, on the slideway; or the delivery boy whipping down the street on his biwheel; or even the little girl skipping rope in the park across the way. She might not be what she seemed. The biological laboratories could do strange things, and Fourre had built up his own secret shops.

The door was in front of him, shaded by a small vine-draped portico. He thumbed the button, and the voice informed him that no one was at home. Which was doubtless a lie, but —*Poor kid! Poor girl, huddled in there against fear, against the nameless night which swallowed her man—waiting for his return, for a dead man's return.* Naysmith shook his head, swallowing

a gorge of bitterness, and spoke into the recorder: "Hello, honey. Aren't you being sort of inhospitable?"

She must have activated the play-back at once, because it was only a minute before the door swung open. Naysmith caught her in his arms as he stepped into the vestibule.

"Marty, Marty, Marty!" She was sobbing and laughing, straining against him, pulling his face down to hers. The long black hair blinded his stinging eyes. "Oh, Marty, take off that mask, it's been so long—"

She was of medium height, lithe and slim in his grasp, the face strong under its elfish lines, the eyes dark and lustrous and very faintly slanted, and the feel and the shaking voice of her made him realize his own loneliness with a sudden desolation. He lifted the mask, letting its helmet-shaped hollowness thud on the floor, and kissed her. He thought savagely: *Donner would have to pick the kind I fall for! But then, he'd be bound to do so, wouldn't he?*

"Sweetheart," he said urgently, while she ruffled his hair, "get some clothes and a mask—Bobby too, of course. Never mind packing anything. Just call up the police and tell 'em you're leaving of your own accord. We've got to get out of here fast."

She stepped back a pace and looked at him with puzzlement. "What's happened, Marty?" she whispered.

"Fast, I said!" He brushed past her into the living room. "I'll explain later."

She nodded and was gone into one of the bedrooms, bending over a crib and picking up a small sleepy figure. Naysmith lit another cigarette while his eyes prowled the room.

It was a typical prefab house, but Martin Donner, this other self who was now locked in darkness, had left his personality here. None of the mass-produced featureless gimmickry of today's floaters—this was the home of people who had meant to stay. Naysmith thought of the succession of apartments and hotel rooms which had been his life, and the loneliness deepened in him.

Yes—just as it should be. Donner had probably built that stone fireplace himself, not because it was needed but because the quiet flicker of burning logs was good to look on. There was an antique musket hanging above the mantle, which bore a few objects—old marble clock, wrought-brass candlesticks, a flashing bit of Lunar crystal. The desk was a mahogany anachronism among relaxers. There were some animated films on the walls, but there were a couple of reproductions too—a Rembrandt rabbi and a Constable landscape—and a few engravings. There was an expensive console with a wide selection of music wires. The bookshelves held their share of microprint rolls, but there were a lot of old-style volumes too, carefully rebound. Naysmith smiled as his eye fell on the set of Shakespeare.

The Donners had not been live-in-the-past cranks, but they had not been rootless either. Naysmith sighed and recalled his anthropology. Western society had been based on the family as an economic and social unit; the first *raison d'être* had gone out with technology, the second had followed in the last war and the postwar upheavals. Modern life was an impersonal thing, marriage—permanent marriage—came late, when both parties were tired of chasing, and was a loose contract at best—the crèche, the school, the public entertainment, made children a shadowy part of the home. And all of this reacted on the human self. From a creature of strong, highly focused emotional life, with a personality made complex by the interaction of environment and ego, Western man was changing to something like the old Samoan aborigines, easy-going, well-adjusted, close friendship and romantic love sliding into limbo. You couldn't say that it was good or bad, one way or the other; but you wondered what it would do to society.

But what could be done about it? You couldn't go back again, you couldn't support today's population with medieval technology even if the population had been willing to try. But that meant accepting the philosophical basis of science, exchanging the cozy medieval cosmos for a bewildering grid of impersonal relationships and abandoning the old cry of man shaking his fist at an empty

heaven: *Why?* If you wanted to control population and disease—and the first, at least, was still a hideously urgent need—you accepted chemical contraceptives and antibiotic tablets and educated people to carry them in their pockets. Modern technology had no use for the pick-and-shovel laborer or for the routine intellectual; so you were faced with a huge class of people not fit for anything else, and what were you going to do about it? What your great, unbelievably complex civilization-machine needed, what it *had* to have in appalling quantity, was the trained man, trained to the limit of his capacity; but then education had to start early and, being free as long as you could pass exams, be ruthlessly selective. Which meant that your First classes, Ph.D.'s at twenty or younger, looked down on the Second schools, who took out their frustration on the Thirds—intellectual snobbishness, social friction, but how to escape it?

And it was, after all, a world of fantastic anachronisms, it had grown too fast and too unevenly. Hindu peasants scratched in their tiny fields and lived in mud huts while each big Chinese collective was getting its own power plant. Murderers lurked in the slums around Manhattan Crater while a technician could buy a house and furniture for six months' pay. Floating colonies were being established in the oceans, cities rose on Mars and Venus and the Moon, while Congo natives

drummed at the rain clouds. Reconciliation—*how?*

Most people looked at the surface of things. They saw that the great upheavals, the World Wars and the Years of Hunger and the Years of Madness and the economic breakdowns, had been accompanied by the dissolution of traditional social nodes, and they thought that the first was the cause of the second. "Give us a chance and we'll bring back the good old days." They couldn't see that those good old days had carried the seeds of death within them, that the change in technology had brought a change in human nature itself which would have deeper effects than any ephemeral transition period. War, depression, the waves of manic perversity, the hungry men and the marching men and the doomed men, were not causes, they were effects—symptoms. The world was changing and you can't go home again.

The psychodynamicists thought they were beginning to understand the process, with their semantic epistemology, games theory, least effort principle, communications theory—maybe so. It was too early to tell. The Scientific Synthesis was still more of a dream than an achievement, and there would have to be at least one generation of Synthesis-trained citizens before the effects could be noticed. Meanwhile, the combination of geriatrics and birth control, necessary as both were, was stiffening the popula-

tion with the inevitable intellectual rigidity of advancing years, just at the moment when original thought was more desperately needed than ever before in history. The powers of chaos were gathering, and those who saw the truth and fought for it were so terribly few—*And are you absolutely sure you're right? Can you really justify your battle?*

"Daddy!"

Naysmith turned and held out his arms to the boy. A two-year-old, a sturdy lad with light hair and his mother's dark eyes, still half misted with sleep, was calling him. "Hullo, Bobby." His voice shook a little.

Jeanne picked the child up. She was masked and voluminously cloaked, and her tones were steadier than his. "All right, shall we go?"

Naysmith nodded and went to the front door. He was not quite there when the bell chimed.

"Who's that?" His ragged bark and the leap in his breast told him how strained his nerves were.

"I don't know . . . I've been staying indoors since—" Jeanne strode swiftly to one of the bay windows and lifted a curtain, peering out. "Two men. Strangers."

Naysmith fitted the mask on his own head and thumbed the playback switch. The voice was hard and sharp: "This is the Federal police. We know you are in, Mrs. Donner. Open at once."

"S-men!" Her whisper shuddered.

Naysmith nodded grimly. "They've tracked you down so soon, eh? Run and see if there are any behind the house."

Her feet pattered across the floor. "Four in the garden," she called.

"All right." Naysmith caught himself just before asking if she could shoot. He pulled the small flat stet-pistol from his tunic and gave it to her as she returned. He'd have to assume her training—the needler was recoilless anyway. "Once more unto the breach, dear friends—' We're getting out of here. Keep close behind me and shoot at their faces or hands—they may have breastplates under their clothes."

His own magnum automatic was cold and heavy in his hand. It was no gentle sleepy-gas weapon—at short range it would blow a hole in a man big enough to put your arm through, and a splinter from its bursting slug killed by hydrostatic shock. The rapping on the door grew thunderous.

She was all at once as cool as he. "Trouble with the law?" she asked.

"The wrong kind of law," he answered. "We've still got cops on our side, though, if that's any consolation."

They couldn't be agents of Fourre's or they would have given him the code sentence. That meant they were sent by the same power which had murdered Martin Donner. He felt no special compunctions about replying in kind. The trick was to escape.

Naysmith stepped back into the living room and picked up a light table, holding it before his body as a shield against needles. Returning to the hall, he crowded himself in front of Jeanne and pressed the door switch.

As the barrier swung open, Naysmith fired, a muted hiss and a dull thum of lead in flesh. That terrible impact sent the S-man off the porch and tumbling to the lawn in blood. His companion shot as if by instinct, a needle thumping into the table. Naysmith gunned him down even as he cried out.

Now—outside—to the boat and fast! Sprinting across the grass, Naysmith felt the wicked hum of a missile fan his cheek. Jeanne whirled, encumbered by Bobby, and sprayed the approaching troop with needles as they burst around the corner of the house.

Naysmith was already at the opening door of his jet. He fired once again while his free hand started the motor.

The S-men were using needles. They wanted the quarry alive. Jeanne stumbled, a dart in her arm, letting Bobby slide to earth. Naysmith sprang back from the boat. A needle splintered on his mask and he caught a whiff that made his head swoop.

The detectives spread out, approaching from two sides as they ran. Naysmith was shielded on one side by the boat, on the other by Jeanne's unstirring form as he picked her up. He crammed her and the child into the

seat and wriggled across them. Slamming the door, he grabbed for the controls.

The whole performance had taken less than a minute. As the jet stood on its tail and screamed illegally skyward, Naysmith realized for the thousandth time that no ordinary human would have been fast enough and sure enough to carry off that escape. The S-men were good, but they had simply been outclassed.

They'd check the house, inch by inch, and find his recent fingerprints, and those would be the same as the stray ones left here and there throughout the world by certain Un-man operatives—the same as Donner's. It was *the* Un-man, the hated and feared shadow who could strike in a dozen places at once, swifter and deadlier than flesh had a right to be, and who had now risen from his grave to harry them again. He, Naysmith, had just added another chapter to an already lengthy legend.

Only—the S-men didn't believe in ghosts. They'd look for an answer. And if they found the right answer, that was the end of every dream.

And meanwhile the hunt was after him: Radio beams, license numbers, air-traffic analysis, broadcast alarms, ID files—all the resources of a great and desperate power would be hounding him across the world, and nowhere could he rest. And that power would absolutely have to find him; it had to fear an Unknown.

VII.

Bobby was weeping in fright, and Naysmith comforted him as well as possible while ripping through the sky. It was hard to be gay, laugh with the boy and tickle him and convince him it was all an exciting game, while Jeanne slumped motionless in the seat and the earth blurred below. But terror at such an early age could have devastating psychic effects and had to be laid at once. *It's all I can do for you, son. The Brotherhood owes you that much, after the dirty trick it played in bringing you into this world as the child of one of us.*

When Bobby was at ease again, placed in the back seat to watch a televised robotshow, Naysmith surveyed his situation. The boat had more legs than the law permitted, which was one good aspect. He had taken it five miles up, well above the lanes of controlled traffic, and was running northward in a circuitous course. His hungry engines gulped oil at a frightening rate, he'd have to stop for a refill two or three times. Fortunately, he had plenty of cash along—the routine identification of a thumbprint check would leave a written invitation to the pursuers, whereas they might never stumble on the isolated fuel stations where he meant to buy.

Jeanne came awake, stirring and gasping. He held her close to him until the spasm of returning consciousness had passed and her eyes

were clear again. Then he lit a cigarette for her and one for himself, and leaned back against the cushions.

"I suppose you're wondering what this is all about," he said.

"Uh-huh." Her smile was uncertain. "How much can you tell me?"

"As much as is safe for you to know," he answered. *How much does she already know? I can't give myself away yet! She must be aware that her husband is . . . was . . . an Un-man, that his nominal job was a camouflage, but the details?*

"Where are we going?" she asked.

"I've got a hiding place for you and the kid, up in the Canadian Rockies. Not too comfortable, I'm afraid, but reasonably safe. If we can get there without being intercepted. It—"

"We interrupt this program to bring you an urgent announcement. A dangerous criminal is at large in an Airflyte numbered USA-1349-U-7683. Repeat, USA-1349-U-7683. This man is believed to be accompanied by a woman and child. If you see the boat, call the nearest police headquarters or Security office at once. The man is wanted for murder and kidnaping, and is thought to be the agent of a foreign power. Further announcements with complete description will follow as soon as possible."

The harsh voice faded and the robotshow came back on. "Man, oh man, oh man," breathed Naysmith. "They don't waste any time, do they?"

Jeanne's face was white, but her

only words were: "How about painting this boat's number over?"

"Can't stop for that now or they'd catch us sure." Naysmith scanned the heavens. "Better strap yourself and Bobby in, though. If a police boat tracks us, I've got machine guns in this one. We'll blast them."

She fought back the tears with a heart-wrenching gallantry. "Mind explaining a little?"

"I'll have to begin at the beginning," he said cautiously. "To get it all in order, I'll have to tell you a lot of things you already know. But I want to give you the complete pattern. I want to break away from the dirty names like spy and traitor, and show you what we're really trying to do."

"*We?*" She caressed the pronoun. No sane human likes to stand utterly alone.

"Listen," said Naysmith, "I'm an Un-man. But a rather special kind. I'm not in the Inspectorate, allowed by charter and treaty to carry out investigations and report violations of things like disarmament agreements to the Council. I'm in the U.N. Secret Service—the *secret* Secret Service—and our standing is only quasi-legal. Officially we're an auxiliary to the Inspectorate; in practice we do a lot more. The Inspectorate is supposed to tell the U. N. Moon bases where to plant their rocket bombs; the Service tries to make bombardment unnecessary by forestalling hostile action."

"By assassinating Kwang-ti?" she challenged.

"Kwang-ti was a menace. He'd taken China out of the U.N. and was building up her armies. He'd made one attempt to take over Mongolia by sponsoring a phony revolt, and nearly succeeded. I'm not saying that he was knocked off by a Chinese Un-man, in spite of his successor government's charges; I'm just saying it was a good thing he died."

"He did a lot for China."

"Sure. And Hitler did a lot for Germany and Stalin did a lot for Russia, all of which was nullified, along with a lot of innocent people, when those countries went to war. Never forget that the U.N. exists first, last, and all the time to keep the peace. Everything else is secondary."

Jeanne lit another cigarette from the previous one. "Tell me more," she said in a voice that suggested she had known this for a long time.

"Look," said Naysmith, "the enemies the U.N. has faced in the past were as nothing to what endangers it now. Because before, the enmity has always been more or less open. In the Second War, the U.N. got started as a military alliance against the fascist powers. In the Third War it became, in effect, a military alliance against its own dissident and excommunicated members. After Rio it existed partly as an instrument of multilateral negotiation but still primarily as an alliance

of a great many states, not merely Western, to prevent or suppress wars anywhere in the world. Oh, I don't want to play down its legal and cultural and humanitarian and scientific activities, but the essence of the U.N. was force, men and machines it could call on from all its member states—even against a member of itself, if that nation were found guilty by a majority vote in the Council. It wasn't quite as large of the United States as you think to turn its Lunar bases over to the U.N.—it thought it could still control the Council as it had done in the past, but it didn't work out that way. Which is all to the good—we need a truly international body.

"Anyway, the principle of intervention to stop all wars, invited or not, led to things like the Great Jihad and the Brazil-Argentine affair. Small-scale war fought to prevent large-scale war. Then when the Russian government appealed for help against its nationalist insurgents, and got it, the precedent of active intervention within a country's own boundaries was set—much to the good and much to the distaste of almost every government, including the American. The conservatives were in power here about that time, you remember, trying unsuccessfully to patch up the Socialist Depression, and they nearly walked us out of membership. Not quite, though—And those other international functions, research and trade regulation and so on, have been growing apace.

"You see where this is leading? I've told you many times before"—a safe guess, that—"but I'll tell you again: The U.N. is in the process of becoming a federal world government. Already it has its own Inspectorate, its own small police force, and its Lunár Guard. Slowly, grudgingly, the nations are being induced to disarm—we abolished our own draft ten years or so back, remember? There's a movement afoot to internationalize the planets and the ocean developments, put them under direct U.N. authority. We've had international currency stabilization for a long time now—sooner or later, we'll adopt one money unit for the world. Tariffs are virtually extinct. Oh, I could go on all day.

"Previous proposals to make a world government of the U.N. were voted down. Nations were too shortsighted. But it is nevertheless happening, slowly, piece by piece, so that the final official unification of man will be only a formality. Understand? Of course you do. It's obvious. The trouble is, our enemies have begun to understand it too."

Naysmith lit a cigarette for himself and scowled at the blue cloud swirling from his nostrils. "There are so many who would like to break the U.N. There are nationalists and militarists of all kinds, all countries, men who would rise to power if the old anarchy returned—and the need for power is a physical hunger in that sort. There are big men of industry, finance, and poli-

tics, who'd like to cut their enterprises loose from regulation. There are labor leaders who want a return of the old strife which means power and profit for them. There are religionists of a dozen sorts who don't like our population-control campaigns. There are cranks and fanatics who seek a chance to impose their own beliefs, everyone from Syndics to Neocommunists, Pilgrims to Hedonists. There are those who were hurt by some or other U.N. action—perhaps they lost a son in one of our campaigns, perhaps a new development or policy wiped out their business—they want revenge. Oh, there are a thousand kinds of them, and if once the U.N. collapses they'll all be free to go fishing in troubled waters."

"Tell me something new," said Jeanne impatiently.

"I have to lead up to it, darling. I have to explain what this latest threat is. You see, all these enemies of ours are getting together. All over the world, they're shelving their many quarrels and uniting into a great secret organization whose one purpose is to weaken and destroy the U.N. You wouldn't think fanatical nationalists of different countries could co-operate? Well, they can, because it's the only way they'll ever have a chance later on to attack each other. The leadership of this organization, which we Un-men somewhat inelegantly refer to as the gang, is brilliant; a lot of big men are members and the whole thing



is beautifully set up. Such entities as the Americanist Party have become fronts for the gang. Whole governments are backing them, governments which are reluctant U.N. members only because of public opinion at home and the pressure that can be brought to bear on nonmembers. Kwang-ti's successors brought China back in, I'm sure, only to ruin us from within. U.N. Councilors are among their creatures, and I know not how many U.N. employees."

Naysmith smiled humorlessly. "Even now, the great bulk of people throughout the world are pro-U.N., looking on it as a deliverer from the hell they've survived. So one way the enemy has to destroy us is by sabotage

from inside. Corruption, arrogance, inefficiency, illegal actions—perpetrated by their own agents in the U.N. and becoming matters of public knowledge. You've heard a lot of that, and you'll hear still more in the months to come if this is allowed to go on. Another way is to ferret out some of our darker secrets—secrets which every government necessarily has—and make them known to the right people. All right, let's face it: Kwang-ti *was* assassinated by an Un-man. We thought the job had been passed off as the work of democratic conspirators, but apparently there's been a leak somewhere and the Chinese accusation is shaking the whole frail edifice of international co-operation. The Council will stall as

long as possible, but eventually it'll have to disown the Service's action and heads will roll. Valuable heads.

"Now if at the proper moment, with the U.N. badly weakened, whole nations walking out again, public confidence trembling, there should be military revolutions within key nations—and the Moon bases seized by ground troops from a nearby colony—Do you see it? Do you see the return of international anarchy, dictatorship, war—and every Un-man in the Solar System hunted to his death?"

VIII.

By a roundabout course avoiding the major towns and colonies, it was many hours even at the airboat's speed to Naysmith's goal. He found his powers of invention somewhat taxed enroute. First he had to give Jeanne a half true account of his whereabouts in the past weeks. Then Bobby, precociously articulate—as he should be with both parents well into the genius class—felt disturbed by the gravity of his elders and the imminent re-disappearance of a father whom he obviously worshiped, and could only be comforted by Naysmith's long impromptu saga of Crock O'Dile, a green Irish alligator who worked at the Gideon Kleinmein Home for Helpless and Houseless Horses. Finally there were others to contend with, a couple of filling station operators and the clerk in a sporting goods store where

he purchased supplies—they had to be convinced in an unobtrusive way that these were dully everyday customers to be forgotten as soon as they were gone. It all seemed to go off easily enough, but Naysmith was cold with the tension of wondering whether any of these people had heard the broadcast alarms. Obviously not, so far—but when they got home and, inevitably, were informed, would they remember well enough?

He zigzagged over Washington, crossing into British Columbia above an empty stretch of forest. There was no official reason for an American to stop, but the border was a logical place for the S-men to watch.

"Will the Canadian police co-operate in hunting us?" asked Jeanne.

"I don't know," said Naysmith. "It all depends. You see, American Security, with its broad independent powers, has an anti-U.N. head, but on the other hand the President is pro-U.N. as everybody knows, and Fourre will doubtless see to it that he learns who this wanted criminal is. He can't actually countermand the chase without putting himself in an untenable position, but he can obstruct it in many ways and can perhaps tip off the Canadian government. All on the q.t., of course."

The boat swung east until it was following the mighty spine of the Rockies, an immensity of stone and forest and snow turning gold with sunset. Naysmith had spent several vacations

here, camping and painting, and knew where he was headed. It was after dark when he slanted the boat downward, feeling his way with the radar.

There was an abandoned uranium-hunting base here, one of the shacks still habitable. Naysmith bounced the boat to a halt on the edge of a steep cliff, cut the engines, and yawned hugely. "End of the line," he said.

They climbed out, burdened with equipment, food, and the sleeping child. Naysmith wheeled the vehicle under a tall pine and led the way up a slope. Jeanne drew a lungful of the sharp moonlit air and sighed. "Martin, it's beautiful! Why didn't you ever take me here before?"

He didn't answer. His flashlight picked out the crumbling face of the shack, its bare wood and metal blurred with many years. The door creaked open on darkness. Inside, it was bare, the flooring rotted away to a soft black mold, a few sticks of broken furniture scattered like bones. Taking a purchased ax, he went into the woods after spruce boughs, heaping them under the sleeping bags which Jeanne had laid out. Bobby whimpered a little in his dreams, but they didn't wake him to eat.

Naysmith's watch showed midnight before the cabin was in order. He strolled out for a final cigarette and Jeanne followed to stand beside him. Her fingers closed about his.

The moon was nearly full, rising over a peak whose heights were one

glitter of snow. Stars wheeled enormously overhead, flashing and flashing in the keen cold air. The forests growing up the slant of this mountain soughed with wind, tall and dark and heady-scented, filled with night and mystery. Down in the gorge there was a river, a long gleam of broken moonlight, the fresh wild noise of its brawling passage drifting up to them. Somewhere an owl hooted.

Jeanne shivered in the chill breeze and crept against Naysmith. He drew his mantle around both of them, holding her close. The little red eye of his cigarette waxed and waned in the dark.

"It's so lovely here," she whispered. "Do you have to go?"

"Yes." His answer came harshly out of his throat. "You've supplies enough for a month. If anyone chances by, then you're of course just a camper on vacation—but I doubt they will, this is an isolated spot. If I'm not back within three weeks, though, follow the river down—there's a small colony about fifty miles from here. Or I may send one of our agents to get you. He'll have a password . . . let's see . . . 'The crocodiles grow green in Ireland.' O.K.?"

Her laugh was muted and wistful.

"I'm sorry to lay such a burden on you, darling," he said contritely.

"It's nothing—except that you'll be away, a hunted man, and I won't know—" She bit her lip. Her face was white in the streaming moon-

glow. "This is a terrible world we live in."

"No, Jeanne. It's a . . . a potentially lovely world. My job is to help keep it that way." He chucked her under the chin, fighting to smile. "Don't let it worry you. Good night, sweet princess."

She kissed him with a terrible yearning. For an instant Naysmith hung back. *Should I tell her? She's safely away now—she has a right to know I'm not her husband.*

"What's wrong, Marty? You seem so strange—"

I don't dare. I can't tell her—not while the enemy is abroad, not while there's a chance of their catching her. And a little longer in her fool's paradise—I can drop out of sight, let someone else give her the news. You coward!

He surrendered. But it was a cruel thing to know, that she was really clasping a dead man to her.

They walked slowly back to the cabin.

Colonel Samsey woke with an animal swiftness and sat up in bed. Sleep drained from him as he saw the tall figure etched black against his open balcony door. He grabbed for the gun under his pillow.

"I wouldn't try that, friend." The voice was soft. Moonlight streamed in to glitter on the pistol in the intruder's hand.

"Who are you?" Samsey gasped it out, hardly aware of the incredible

fact yet. Why—he was a hundred and fifty stories up—his front entrance was guarded, and no copter could so silently have put this masked figure on his balcony—

"Out of bed, boy. Fast! O.K., now clasp your hands on top of your head."

Samsey felt the night wind cold on his body. It was a helplessness, this standing without his uniform and pistol belt, looking down the muzzle of a stranger's gun. His close-cropped scalp felt stubbly under his palms.

"How did you get in?" he whispered.

Naysmith didn't feel it necessary to explain the process. He had walked from the old highway on which he had landed his jet and used vacuum shoes and gloves to climb the sheer face of Denver Unit. "Better ask why I came," he said.

"All right, blast you! Why? This is a gross violation of privacy, plus menace and—" Samsey closed his mouth with a snap. Legality had plainly gone by the board.

"I want some information." Naysmith seated himself halfway on a table, one leg swinging easily, the gun steady in his right hand while his left fumbled in a belt pouch. "And you, as a high-ranking officer in the American Guard and a well-known associate of Roger Wade, seemed likeliest to have it."

"You're crazy! This is— We're just a patriotic society. You know that. Or should. We—"

"Cram it, Samsey," said Naysmith wearily. "The American Guard has ranks, uniforms, weapons, and drills. Every member belongs to the Americanist Party. You're a private army, Nazi style, and you've done the murders, robberies, and beatings of the Party for the past five years. As soon as the government is able to prove that in court, you'll all go to the Antarctic mines and you know it. Your hope is that your faction can be in power before there's a case against you."

"Libel! We're a patriotic social group—"

"I regret my approach," said Naysmith sardonically. And he did. Direct attack of this sort was not only unlawful, it was crude and of very limited value. But he hadn't much choice. He *had* to get some kind of line on the enemy's plans, and the outlawing of the Brotherhood and the general suspicion cast on the Service meant that standard detective approaches were pretty well eliminated for the time being. Half a loaf— "Nevertheless, I want certain information. The big objective right now is to overthrow the U.N. How do you intend to accomplish that? Specifically, what is your next assignment?"

"You don't expect—"

Samsey recoiled as Naysmith moved. The Un-man's left hand came out of his pouch like a striking snake even as his body hurtled across the floor. The right arm grasped Samsey's biceps, twisting him around in front of the in-

truder, a knee in his back, while the hypodermic needle plunged into his neck.

Samsey struggled, gasping. The muscles holding him were like steel, catlike, meeting his every wrench with practiced ease. And now the great wave of dizziness came, he lurched and Naysmith supported him, easing him back to the bed.

The hypo had been filled with four cubic centimeters of a neoscopaneurine mixture, very nearly a lethal dose. But it would act fast! Naysmith did not think the colonel had been immunized against such truth drugs—the gang wouldn't trust its lower echelons that much.

Moonlight barred the mindlessly drooling face on the pillow with a streak of icy silver. It was very quiet here, only the man's labored breathing and the sigh of wind blowing the curtains at the balcony door. Naysmith gave his victim a stimulant injection, waited a couple of minutes, and began his interrogation.

Truth drugs have been misnamed. They do not intrinsically force the subject to speak truth; they damp those higher brain centers needed to invent a lie or even to inhibit response. The subject babbles, with a strong tendency to babble on those subjects he has previously been most concerned to keep secret; and a skilled psychologist can lead the general direction of the talk.

First, of course, the private nasti-

nesses which every human has buried within himself came out, like suppuration from an inflamed wound. Naysmith had been through this before, but he grimaced—Samsey was an especially bad sort, a jungled darkness of perverted instinct. These aggressively manly types often were. Naysmith continued patiently until he got onto more interesting topics.

Samsey didn't know anyone higher in the gang than Wade. Well, that was to be expected. In fact, Naysmith thought scornfully, he, the outsider, knew more about the organization of the enemy than any one member below the very top ranks. But that was a pretty general human characteristic too—a man did his job, for whatever motives of power, profit, or simple existence he might have, and didn't even try to learn where it fitted into the great general pattern. The synthesizing mentality is tragically rare.

But a free society at least permitted its members to learn, and a rational society encouraged them to do so; whereas totalitarianism, from the bossy foreman to the hemispheric dictator, was based on the deliberate suppression of communications. Where there was no feedback, there could be no stability except through the living death of imposed intellectual rigidity.

Back to business! Here came something he had been waiting for, the next task for the American Guard's thugs. The *Phobos* was due in from Mars in a week. Guardsmen were supposed to

arrange the death of one Barney Rosenberg, passenger, as soon as possible after his debarkation on Earth. Why? The reason was not given and had not been asked for, but a good description of the man was available.

Mars—yes, the Guard was also using a privately owned spaceship to run arms to a secret base in the Thyle II country, where they were picked up by Pilgrims.

So! The Pilgrims were in on the gang. The Service had suspected as much, but here was proof. This might be the biggest break of all, but Naysmith had a hunch that it was incidental. Somehow, the murder of an obscure returnee from Mars impressed him as involving greater issues.

There wasn't more which seemed worth the risk of waiting. Naysmith had a final experiment to try.

Samsey was a rugged specimen, already beginning to pull out of his daze. Naysmith switched on a lamp, its radiance falling across the distorted face below him. The eyes focused blur- rily on his sheening mask. Slowly, he lifted it.

"Who am I, Samsey?" he asked quietly.

A sob rattled in the throat. "Donner . . . but you're dead. We killed you in Chicago. You died, you're dead."

That settled that. Naysmith replaced his mask. Systematically, he repaired the alarms he had annulled for his entry and checked the room for traces of his presence. None. Then he

took Samsey's gun from beneath the pillow. Silenced, naturally. He folded the lax fingers about the trigger and blew the colonel's brains out.

They'd suspect it wasn't suicide, of course, but they might not think of a biochemical autopsy before the drugs in the bloodstream had broken down beyond analysis. At least there was one less of them. Naysmith felt no qualms. This was not a routine police operation, it was war.

He went back to the balcony, closing the door behind him. Swinging over the edge as he adjusted his vacuum cups, he started the long climb earthward.

The Service could ordinarily have provided Naysmith with an excellent disguise, but the equipment needed was elaborate and he dared not assume that any of the offices which had it were unwatched by Security. Better rely on masks and the feeble observational powers of most citizens to brazen it out.

Calling Prior from a public communication booth, even using the scrambler, was risky too, but it had to be done. The mails were not to be trusted any more, and communication was an absolute necessity for accomplishment.

The voice was gray with weariness: "Mars, eh? Nice job, Naysmith. What should we do?"

"Get the word to Fourre, of course, for whatever he can make of it. And a coded radio message to our operatives

on Mars. They can check this Pilgrim business and also look into Rosenberg's background and associates. Should be a lot of leads there. However, I'll try to snatch Rosenberg myself, with a Brother or two to help me, before the Americanists can get their hands on him."

"Yeah, you'd better. The Service's hands are pretty well tied just now while the U.N. investigation of the Chinese accusations is going on. Furthermore, we can't be sure of many of our own people. So we, and especially the Brotherhood, will have to act pretty much independently for the time being. Carry on as well as you can. However, I can get your information to Rio and Mars all right."

"Good man. How are things going with you?"

"Don't call me again, Naysmith. I'm being watched, and my own men can't stop a really all-out assassination attempt." Prior chuckled dryly. "If they succeed, we can talk it over in hell."

"To modify what the old cacique said about Spaniards in heaven—if there are nationalists in hell, I'm not sure if I want to go there. O.K., then. And good luck!"

It was only the next day that the newscasts carried word of the murder of one Nathan Prior, semanticist residing at Frisco Unit. It was believed to be the work of foreign agents, and S-men had been assigned to aid the local police.

IX.

Most of the Brothers had, of course, been given disguises early in their careers. Plastic surgery had altered the distinctive countenance and the exact height, false fingerprints and retinals been put in their ID records—each of them had a matching set of transparent plastic “tips” to put on his own fingers when he made a print for any official purpose. These men should temporarily be safe, and there was no justification for calling on their help yet. They were sitting tight and wary, for if the deadly efficiency of Hessling’s organization came to suspect them and pull them in, an elementary physical exam would rip the masquerade wide open.

That left perhaps a hundred undisguised Brothers in the United States when word came for them to go underground. Identical physique could be too useful—for example, in furnishing unshakable alibis, or in creating the legend of a superman who was everywhere—to be removed from all. Some of these would be able to assume temporary appearances and move in public for a while. The rest had to cross the border or hide.

The case of Juho Lampi was especially unfortunate. He had made enough of a name as a nucleonic engineer in Finland to be invited to America, and his disguise was only superficial. When Fourre’s warning went out on the code circuit, he left

his apartment in a hurry. A mechanic at the garage where he hired an airboat recognized the picture that had been flashed over the entire country. Lampi read the man’s poorly hidden agitation, slugged him, and stole the boat, but it put the S-men on his trail. It told them, furthermore, that the identical men were not only American.

Lampi had been given the name and address of a woman in Iowa. The Brothers were organized into cells of half a dozen, each with its own rendezvous and contacts, and this was to be Lampi’s while he was in the States. He went there after dark and got a room. Somewhat later, Naysmith showed up—he, being more nearly a full-time operative, knew where several cells had their meeting places. He collected Lampi and decided not to wait for anyone else. The *Phobos* was coming to Earth in a matter of hours. Naysmith had gone to Iowa in a self-driver boat hired from a careless office in Colorado; now, through the woman running the house, the two men rented another and flew back to Robinson Field.

“I have my own boat—repainted, new number, and so on—parked near here,” said Naysmith. “We’ll take off in it—if we get away.”

“And then what?” asked Lampi. His English was good, marked with only a trace of accent. All the Brothers were born linguists.

“I don’t know. I just don’t know.” Naysmith looked moodily about him.

"We're being hunted as few have ever been hunted." He murmured half to himself:

*"I heard myself proclaim'd;
And by the happy hollow of a tree
Escap'd the hunt. No port is free; no
place,
That guard and most unusual vigilance
Does not attend my taking."*

They were sitting in the Moon-jumper, bar and restaurant adjacent to the spaceport. They had chosen a booth near the door, and the transparent wall on this side opened onto the field. Its great pale expanse of concrete stretched under glaring floodlights out toward darkness, a gigantic loom of buildings on three sides of it. Covered mechanics were busy around a series of landing cradles. A uniformed policeman strolled by, speaking idly with a technician. Or was it so casual? The technic looked solemn.

"Oh, well," said Lampi. "To get onto a more cheerful subject, have you seen Warschawski's latest exhibition?"

"What's so cheerful about that?" asked Naysmith. "It's awful. Sculpture just doesn't lend itself to abstraction as he seems to think."

Though the Brothers naturally tended to have similar tastes, environment could make a difference. Naysmith and Lampi plunged into a stiff-necked argument about modern art. It was going at a fine pace when they were interrupted.

The curtains of the booth had been drawn. They were twitched aside now and the waitress looked in. She was young and shapely, and the skimpy playsuit might have been painted on. Beyond her, the bar room was a surge of people, a buzz and hum and rumble of voices. In spite of the laboring ventilators, there was a blue haze of smoke in the air.

"Would you like another round?" asked the girl.

"Not just yet, thanks," said Naysmith, turning his masked face toward her. He had dyed his yellow hair a mousey brown at the hideaway, and Lampi's was now black, but that didn't help much; there hadn't been time to change the wiry texture. He sat stooped, so that she wouldn't see at a casual glance that he was as big as Lampi, and hoped she wasn't very observant.

"Want some company?" she asked. "I can fix it up."

"No, thanks," said Naysmith. "We're waiting for the rocket."

Naysmith paid the bill and when the waitress left, Lampi asked:

"What about the American Guardsmen?"

"Probably those burly characters lounging at the bar. Didn't you notice them as we came in? They'll have friends elsewhere who'll—"

"Your attention, please. The first tender from the Phobos will be cradling in ten minutes, carrying half the passengers from Mars. The second will fol-

low ten minutes later. Repeat, the first—

"Which one is Rosenberg on?" asked Lampi.

"How should I know?" Naysmith shrugged. "We'll just have to take our chance. Drink up."

He patted his shoulder-holstered gun and loosened the tunic over it. He and Lampi had obtained breastplates and half boots at the hideaway, their masks were needle-proof, and an arm or thigh was hard to hit when a knee-length cloak flapped around the body. They should be fairly well immune to stet-guns if they worked fast. Not to bullets—but even the Guardsmen probably wouldn't care to use those in a crowd.

The two men went out of the booth and mingled with the people swirling toward the passenger egress. They separated as they neared the gate and hung about on the fringe of the group. There were a couple of big hard-looking men in masks who had shouldered their way up next to the gate. One of them had been in the Moonjumper, Naysmith remembered.

He had no picture of Rosenberg, and Samsey's incoherent description had been of little value. The man was a nonentity who must have been off Earth for years. But presumably the Guardsmen knew what to look for. Which meant that—

There was a red and yellow glare high in the darkened heavens. The far thunder became a howling, bellowing, shaking roar that trembled in the

bones and echoed in the skull. Nerves crawled with the nameless half terror of unheard subsonic vibrations. The tender grew to a slim spearhead, backing down with radio control on the landing cradle. Her chemical blasts splashed vividly off the concrete baffles. When she lay still and the rockets cut off, there was a ringing silence.

Endless ceremony — the mechanics wheeled up a stairway, the air lock ground open, a steward emerged, a medical crew stood by to handle space sickness—Naysmith longed for a cigarette. He shifted on his feet and forced his nerves to a semblance of calm.

There came the passengers, half a dozen of them filing toward the gateway. They stopped one by one at the clearance booth to have their papers stamped. The two Guardsmen exchange a masked glance.

A stocky Oriental came through first. Then there was a woman engineer in Spaceways uniform who held up the line as she gathered two waiting children into her arms. Then—

He was a small bandy-legged man with a hooked nose and a leathery brown skin, shabbily clad, lugging a battered valise. One of the Guardsmen tapped him politely on the arm. He looked up and Naysmith saw his lips moving, the face etched in a harsh white glare. He couldn't hear what was said over the babble of the crowd, but he could imagine it. "Why, yes, I'm Barney Rosenberg. What do you

want?"

Some answer was given him—it didn't really matter what. With a look of mild surprise, the little fellow nodded. The other Guardsman pushed over to him, and he went out of the crowd between them. Naysmith drew his stet-gun, holding it under his cloak, and cat-footed after. The Guardsmen didn't escort Rosenberg into the shadows beyond the field, but walked over toward the Moonjumper. There was no reason for Rosenberg to suspect their motives, especially if they stood him a drink.

Naysmith lengthened his stride and fell in beside the right-hand man. He didn't waste time: his gun was ready, its muzzle against the victim's hip. He fired. The Guardsman strangled on a yell.

Lampi was already on the left, but he'd been a trifle slow. That enemy grabbed the Finn's gun wrist with a slashing movement. Naysmith leaned over the first Guardsman, who clawed at him as he sagged to his knees, and brought the edge of his left palm down on the second one's neck, just at the base of the skull. The blow cracked numbingly back into his own sinews.

"What the blazes—" Rosenberg opened his mouth to shout. There was no time to argue, and Lampi needled him. With a look of utter astonishment, the prospector wilted. Lampi caught him under the arms and hoisted him to one shoulder.

The kidnapping had been seen. Peo-

ple were turning around, staring. Somebody began to scream. Lampi stepped over the two toppled men and followed Naysmith.

Past the door of the bar, out to the street, hurry!

A whistle skirled behind them. They jumped over the slideway and dashed across the avenue. There was a transcontinental Diesel truck bearing down on them, its lights one great glare, the roar of its engine filling the world. Naysmith thought that it brushed him. But its huge bulk was a cover. They plunged over the slideway beyond, ignoring the stares of passersby, and into the shadows of a park.

A siren began to howl. When he had reached the sheltering gloom thrown by a tree, Naysmith looked behind him. Two policemen were coming, but they hadn't spotted the fugitives yet. Naysmith and Lampi ducked through a formal garden, jumping hedges and running down twisted paths. Gravel scrunched underfoot.

Quartering across the park, Naysmith led the way to his airboat. He fumbled the door open and slithered inside. Lampi climbed in with him, tossing Rosenberg into the back seat and slamming the door. The boat slid smoothly out into passing traffic. There were quite a few cars and boats abroad, and Naysmith mingled with them.

Lampi breathed heavily in the gloom. A giant neon sign threw a bloody light over his faceless mask.

"Now what?" he asked.

"Now we get the devil out of here," said Naysmith. "Those boys are smart. It won't take them long to alert traffic control and stop all nearby vehicles for search. We have to be in the air before that time."

They left the clustered shops and dwellings, and Naysmith punched the board for permission to take off southbound. The automatic signal flashed him a fourth-lane directive. He climbed to the indicated height and went obediently south on the beam. Passing traffic was a stream of moving stars around him.

The emergency announcement signal blinked an angry red. "Fast is right," said Lampi, swearing in four languages.

"Up we go," said Naysmith.

He climbed vertically, narrowly missing boats in the higher levels, until he was above all lanes. He kept climbing till his vehicle was in the lower stratosphere. Then he turned westward at top speed.

"We'll go out over the Pacific," he explained. "Then we find us a nice uninhabited islet with some trees and lie doggo till tomorrow night. Won't be any too comfortable, but it'll have to be done and I have some food along." He grinned beneath his mask. "I hope you like cold canned beans, Juho."

"And then—?"

"I know another island off the Cali-



fornia coast," said Naysmith. "We'll disguise this boat at our first stop, of course, changing the number and recognition signal and so on. Then at the second place we'll refuel and I'll make an important call. You can bet your last mark the enemy knows who pulled this job and will have alerted all fuel station operators this time. But the man where we're going is an absent-minded old codger who won't be hard to deceive." He scowled. "That'll take about the last of my cash money, too. Have to get more somehow, if we're to carry on in our present style."

"Where do we go from there?" asked Lampi.

"North, I suppose. We have to hide Rosenberg somewhere, and you—" Naysmith shook his head, feeling a dull pain within him. That was the end of the masquerade. Jeanne Donner would know.

At first Barney Rosenberg didn't believe it. He was too shocked by this violence of events. The Guardsmen had simply told him they were representatives of some vaguely identified company which was thinking of developments on Mars and wanted to consult him—he'd been offered a hotel suite and had been told the fee would be nice. Now he looked at his kidnapers with bewildered eyes and challenged them to say who they were.

"Think we'd be fools enough to carry our real IDs around?" snorted Naysmith. "You'll just have to take

our word for it that we're U.N. operatives—till later, anyway, when we can safely prove it. I tell you, the devil is loose on Earth and you need protection. Those fellows were after your knowledge, and once they got that you'd have been a corpse."

Rosenberg looked from one masked face to the other. His head felt blurred, the drug was still in him and he couldn't think straight. But those voices—

He thought he remembered the voices. Both of them. Only they were the same.

"I don't know anything," he said weakly. "I tell you, I'm just a prospector, home from Mars."

"You must have information—that's the only possibility," said Lampi. "Something you learned on Mars which is important to them, perhaps to the whole world. What?"

Fieri in Drygulch, and the Pilgrim who had been so eager—

Rosenberg shook his head, trying to clear it. He looked at the two big cloaked figures hemming him in. There was darkness outside the hurtling airboat.

"Who are you?" he whispered.

"I told you we're friends. Un-men. Secret agents." Naysmith laid a hand on Rosenberg's shoulder. "We want to help you, that's all. We want to protect you and whatever it is you know."

Rosenberg looked at the hand—strong, sinewy, blunt-fingered, with

fine gold hairs on the knuckles. But no, no, no, His heart began thumping till he thought it must shatter his ribs.

"Let me see your faces," he gasped.

"Well . . . why not?" Naysmith and Lampi took off their masks. The dull panel light gleamed off the same features, broad, strong-boned, blue-eyed. There was a deep wrinkle above each jutting triangle of nose. The left ear was faintly bigger than the right. Both men had a trick of cocking their head a trifle sideways when listening.

We'll tell him we're twin brothers, thought Naysmith and Lampi simultaneously.

Rosenberg shrank into the seat. There was a tiny whimper in his throat.

"Stef," he murmured shakingly. "Stefan Rostomily."

X.

The newscasts told of crisis in the U.N. Etienne Fourre, backed by its president, was claiming that the Chinese government was pressing a fantastic charge to cover up designs of its own. A full-dress investigation was in order. Only—as Besser, minister of international finance, pointed out—when the official investigating service was itself under suspicion, who could be trusted to get at the facts?

In the United States, Security was after a dangerous spy and public enemy. Minute descriptions of Donner-Naysmith-Lampi were on all the

screens. Theoretically, the American president could call off the hunt, but that would mean an uproar in the delicately balanced Congress; there'd have been a vote of confidence, and if the president lost that he and his cabinet would have to resign—and who would be elected to succeed? But Naysmith and Lampi exchanged grins at the interview statement of the president, that he thought this much-hunted spy was in Chinese pay.

Officially, Canada was co-operating with the United States in chasing the fugitive. Actually, Naysmith was sure it was bluff, a sop to the anti-U.N. elements in the Dominion. Mexico was doing nothing—but that meant the Mexican border was being closely watched.

It couldn't go on. The situation was so unstable that it would have to end, one way or another, in the next several days. If Hessling's men dragged in a Brother—well—whether or not Fourre's organization survived, it would have lost its greatest and most secret asset.

But the main thing, Naysmith reflected grimly, was to keep Fourre's own head above water. The whole purpose of this uproar was to discredit the man and his painfully built-up service, and to replace him and his key personnel with nationalist stooges. After that, the enemy would find the next stages of their work simple.

And what can I do?

Naysmith felt a dark surge of helplessness. Human society had grown

too big, too complex and powerful. It was a machine running blind and wild, and he was a fly caught in the gears and stamped into nothingness. There was one frail governor on the machine, only one, and if it were broken the whole thing would shatter into ruin. What to do? What to do?

He shrugged off the despair and concentrated on the next moment. The first thing was to get Rosenberg's information to his own side.

The island was a low sandy swell in an immensity of ocean. There was harsh grass on it, and a few trees gnarled by the great winds, and a tiny village. Naysmith dropped Lampi on the farther side of the island to hide till they came back for him. Rosenberg took the Finn's mask, and the two jetted across to the fuel station. While their boat's tanks were being filled, they entered a public communibooth.

Peter Christian, in Mexico City—Naysmith dialed the number given him by Prior. That seemed the best bet—and wasn't the kid undergoing Synthesis training? His logic might be able to integrate this meaningless flux of data.

No doubt every call across either border was being monitored—illegally but thoroughly. However, the booth had a scrambler unit. Naysmith fed it a coin, but didn't activate it immediately.

"Could I speak to Peter Christian?" he asked the servant whose face ap-

peared in the screen. "Tell him it's his cousin Joe calling. And give him this message: 'The ragged scoundrel leers merrily, not peddling babies.'"

"*Señor?*" The brown face looked astonished.

"It's a private signal. Write it down, please, so you get it correct." Naysmith dictated slowly. "'The ragged scoundrel—'"

"Yes, understand. Wait, please, I will call the young gentleman."

Naysmith stood watching the screen for a moment. He could vaguely make out the room beyond, a solid and handsomely furnished place. Then he stabbed at the scrambler buttons. There were eight of them, which could be punched in any order to yield 40,320 possible combinations. The key letters, known to every Brother, were currently MNTSRPBL, and "the ragged scoundrel" had given Christian the order Naysmith was using. When Hessler's men got around to playing back their monitor tapes, the code sentence wouldn't help them unscramble without knowledge of the key. On the other hand, it wouldn't be proof that their quarry had been making the call; such privacy devices were not uncommon.

Naysmith blanked the booth's walls and removed his own and Rosenberg's masks. The little man was in a state of hypnosis, total recall of the Fieri manuscript he had read on Mars. He was already drawing structural formulas of molecules.

The random blur and noise on the

screen clicked away as Peter Christian set the scrambler unit at that end. It was his own face grown younger which looked out at Naysmith—a husky blond sixteen-year-old, streaked with sweat and panting a little. He grinned at his Brother.

“Sorry to be so long,” he said. “I was working out in the gym. Have a new mech-volley play to develop which looks promising.” His English was fluent and Naysmith saw no reason to use a Spanish which, in his own case, had grown a little rusty.

“Who’re you the adoptive son of?” asked the man. Privacy customs didn’t mean much in the Brotherhood.

“Holger Christian—Danish career diplomat, currently ambassador to Mexico. They’re good people, he and his wife.”

Yes, thought Naysmith, they would be, if they let their foster child, even with his obvious brilliance, take Synthesis. The multi-ordinal integrating education was so new and untried, and its graduates would have to make their own jobs. But the need was desperate. The sciences had grown too big and complex, like everything else, and there was too much overlap between the specialties. Further progress required the fully trained synthesizing mentality.

And progress itself was no longer something justified only by Victorian prejudice. It was a matter of survival. Some means of creating a stable social and economic order in the face of con-

tinuous revolutionary change had to be found. More and more technological development was bitterly essential. Atomic-powered oil synthesis had come barely in time to save a fuel-starved Earth from industrial breakdown—now new atomic energy fuels had to be evolved before the old ores were depleted. The rising incidence of neurosis and insanity among the intelligent and apathy among the insensitive had to be checked before other Years of Madness came. Heredity damaged by hard radiation had to be unscrambled—somehow—before dangerous recessive traits spread through the entire human population. Communications theory, basic to modern science and sociology, had to be perfected. There had to be—Why enumerate? Man had come too far and too fast. Now he was balanced on a knife edge over the red gulfs of hell.

When Peter Christian’s education was complete, he would be one of Earth’s most important men—whether he realized it himself or not. Of course, even his foster parents didn’t know that one of his Synthesis instructors was an Un-man who was quietly teaching him the fine points of a secret service. They most assuredly did not know that their so normal and healthy boy was already initiated into a group whose very existence was an unrecorded secret.

The first Brothers had been raised in the families of Un-man technicians and operators who had been in on the

project from the start. This practice continued on a small scale, but most of the new children were put out for adoption through recognized agencies around the world—having first been provided with a carefully faked background history. Between sterility and the fear of mutation, there was no difficulty in placing a good-looking man child with a superior family. From babyhood, the Brother was under the influence—a family friend or a pediatrician or instructor or camp counselor or minister, anyone who could get an occasional chance to talk intimately with the boy, would be a spare-time employee of Fourre's and helped incline the growing personality the right way. It had been established that a Brother could accept the truth and keep his secret from the age of twelve, and that he never refused to turn Un-man. From then on, progress was quicker. The Brothers were precocious: Naysmith was only twenty-five, and he had been on his first mission at seventeen; Lampi was an authority in his field at twenty-three. There should be no hesitation in dumping this responsibility on Christian, even if there had been any choice in the matter.

"Listen," said Naysmith, "you know all hell has broken loose and that the American S-men are out to get us. Specifically, I'm the one they think they're hunting. But Lampi, a Finnish Brother, and I have put the snatch on one Barney Rosenberg from

Mars. He has certain information the enemy wants." The man knew what the boy must be thinking—in a way, those were his own thoughts—and added swiftly: "No, we haven't let him in on the secret, though the fact that he was a close friend of Rostomily's makes it awkward. But it also makes him trust us. He read the report of a Fieri on Mars, concerning suspended animation techniques. He'll give it to you now. Stand by to record."

"O.K., *ja, si.*" Christian grinned and flipped a switch. He was still young enough to find this a glorious cloak-and-dagger adventure. Well, he'd learn, and the learning would be a little death within him.

Rosenberg began to talk, softly and very fast, holding up his structural formulas and chemical equations at the appropriate places. It took a little more than an hour. Christian would have been bored if he hadn't been so interested in the material; Naysmith fumed and sweated unhappily. Any moment there might come suspicion, discovery—The booth was hot.

"That's all, I guess," said Naysmith when the prospector had run down. "What do you make of it?"

"Why, it's sensational! It'll jump biology two decades!" Christian's eyes glowed. "Surgery . . . yes, that's obvious. Research techniques—*Gud Fader i himlen*, what a discovery!"

"And why do you think it's so important to the enemy?" snapped

Naysmith, rather impatiently.

"Isn't it plain? The military uses, man! You can use a light dose to immunize against terrific accelerations. Or you can pack a spaceship with men in frozen sleep, load 'em in almost like boxes, and have no supply worries en route. Means you can take a good-sized army from planet to planet. And of course there's the research aspect. With what can be learned with the help of suspension techniques, biological warfare can be put on a wholly new plane."

"I thought as much." Naysmith nodded wearily. It was the same old story, the worn-out tale of hate and death and oppression. The logical end-product of scientific warfare was that *all* data became military secrets—a society without communication in its most vital department, without feedback or stability. That was what he fought against. "All right, what can you do about it?"

"I'll unscramble the record . . . no, better leave it scrambled . . . and get it to the right people. Hm-m-m—give me a small lab and I'll undertake to develop certain phases of this myself. In any case, we can't let the enemy have it."

"We've probably already given it to them. Chances are they have monitors on this line. But they can't get around to our recording and to trying all possible unscrambling combinations in less than a few days, especially if we keep them busy." Naysmith

leaned forward, his haggard eyes probing into the screen. "Pete, as the son of a diplomat you must have a better than average notion of the overall politico-military picture. What can we do?"

Christian sat still for a moment. There was a curious withdrawn expression on the young face. His trained mind was assembling logic networks in a manner unknown to all previous history. Finally he looked back at the man.

"There's about an eighty per cent probability that Besser is the head of the gang," he said. "Chief of international finance, you know. That's an estimate of my own; I don't have Fourre's data, but I used a basis of Besser's past history and known character, his country's recent history, the necessary communications for a least-effort anti-U.N. setup on a planetary scale, the . . . never mind. You already know with high probability that Roger Wade is his chief for North America. I can't predict Besser's actions very closely, since in spite of his prominence he uses privacy as a cover-up for relevant psychological data, but if we assume that he acts on a survival axiom, and logically apart from his inadequate grounding in modern socio-theory and his personal bias . . . hm-m-m."

"Besser, eh? I had my own suspicions, besides what I've been told. Financial integration has been proceeding rather slowly since he took

office. Never mind. We have to strike at his organization. What to do?"

"I need more data. How many American Brothers are underground in the States and can be contacted?"

"How should I know? All that could would try to skip the country. I'm only here because I know enough of the overall situation to act usefully. I hope."

"Well, I can scare up a few in Mexico and South America, I think. We have our own communications. And I can use my 'father's' sealed diplomatic circuit to get in touch with Fourre. You have this Lampi with you, I suppose?" Christian sat in moody stillness for a while. Then:

"I can only suggest—and it's a pretty slim guess—that you two let yourselves be captured."

The man sighed. He had rather expected this.

Naysmith brought the boat whispering down just as the first cold light of sunrise crept skyward. He buzzed the narrow ledge where he had to land, swung back, and lowered the wheels. When they touched, it was a jarring, brutal contact that rattled his teeth together. He cut the motor and there was silence.

If Jeanne was alert, she'd have a gun on him now. He opened the door and called loudly: "The crocodiles grow green in Ireland." Then he stepped out and looked around him.

The mountains were a high shadowy

loom of mystery. Dawn lay like roses on their peaks. The air was fresh and chill, strong with the smell of pines, and there was dew underfoot and alarmed birds clamoring into the glowing sky. Far below him, the river thundered and brawled in an echoing hollowness.

Rosenberg climbed stiffly after him and leaned against the boat. Earth gravity dragged at his muscles, he was cold and hungry and cruelly tired, and these men who were ghosts of his youth would not tell him what the darkness was that lay over the world. Sharply he remembered the thin bitter sunup of Mars, a gaunt desert misting into life and a single crag etched against loneliness. Homesickness was an ache in him.

Only—he had not remembered Earth could be so lovely.

"Martin! Oh, Martin!" The woman came down the trail, running, slipping on the wet needles. Her raven hair was cloudy about the gallantly lifted head, and there was a light in her eyes which Rosenberg had almost forgotten. "Oh, my darling, you're back!"

Naysmith held her close. One minute more, one little minute before Lampi emerged, was that too much?

He hadn't been able to leave the Finn anywhere behind. There was no safe hiding place in all America, not when the S-men were after him. There could be no reliable rendezvous later, and Lampi would be needed. He had to come along.

Of course, the Finn could have stayed masked and mute all the while he was at the cabin. But Rosenberg would have to be left here, it was the best hideaway for him. The prospector might be trusted to keep secret the fact that two identical men had brought him here—or he might not. He was shrewd, Jeanne's conversation would lead him to some suspicion of the truth, and he might easily decide that she had been the victim of a shabby trick and should be given the facts. Then anything could happen.

Oh, with some precautions Naysmith could probably hide his real nature from the girl a while longer. Rosenberg might very well keep his mouth shut on request. But there was no longer any point in concealing the facts from her—she would not be captured by the gang before they had the Un-man himself. And sooner or later she must in all events be told. The man she thought was her husband was probably going to die, and it was as well that she think little of him and have no fears and sorrows on his account. One death was enough for her.

He laid his hands on the slim shoulders and stood back a bit, looking into her eyes. His own crinkled in the way she must know so well, and they were unnaturally bright in the pale dawn-glow. When he spoke, it was almost a whisper.

"Jeanne, honey, I've got some bad news for you."

He felt her stiffen beneath his hands, saw the face tighten and heard the little hiss of indrawn breath. There were dark rings about her eyes, she couldn't have slept very well while he was gone.

"This is a matter for absolute secrecy," he went on, tonelessly. "No one—I repeat no one—is to have a word of it. But you have a right to the truth."

"Go ahead." There was an edge of harshness in her voice. "I can take it."

"I'm not Martin Donner," he said. "Your husband is dead."

She stood rigid for another heartbeat, and then she pulled wildly free. One hand went to her mouth. The other was half lifted as if to fend him off.

"I had to pretend it, to get you away without any fuss," he went on, looking at the ground. "The enemy would have . . . tortured you, maybe. Or killed you and Bobby. I don't know."

Juho Lampi came up behind Naysmith. There was compassion on his face. Jeanne stepped backward, voiceless.

"You'll have to stay here," said Naysmith bleakly. "It's the only safe place. This is Mr. Rosenberg, whom we're leaving with you. I assure you he's completely innocent of anything that has been done. I can't tell either of you more than this." He took a long step toward her. She stood her ground, unmoving. When he clasped her hands

into his, they were cold. "Except that I love you," he whispered.

Then, swinging away, he faced Lampi. "We'll clean up and get some breakfast here," he said. "After that, we're off."

Jeanne did not follow them inside. Bobby, awakened by their noise, was delighted to have his father back—Lampi had re-assumed a mask—but Naysmith gave him disappointingly little attention. He told Rosenberg that the three of them should stay put here as long as possible before striking out for the village, but that it was hoped to send a boat for them in a few days.

Jeanne's face was cold and bloodless as Naysmith and Lampi went back to the jet. When it was gone, she started to cry. Rosenberg wanted to leave and let her have it out by herself, but she clung to him blindly and he comforted her as well as he could.

XI.

There was no difficulty about getting captured. Naysmith merely strolled into a public lavatory at Oregon Unit and took off his mask to wash his face; a man standing nearby went hurriedly out, and when Naysmith emerged he was knocked over by the stet-gun of a Unit policeman. It was what came afterward that was tough.

He woke up, stripped and handcuffed, in a cell, very shortly before a

team of S-men arrived to lead him away. These took the added precaution of binding his ankles before stuffing him into a jet. He had to grin sourly at that, it was a compliment of sorts. Little was said until the jet came down on a secret headquarters which was also a Wyoming ranch.

There they gave him the works. He submitted meekly to every identification procedure he had ever heard of. Fluoroscopes showed nothing hidden within his body except the communicator, and there was some talk of operating it out; but they decided to wait for orders from higher up before attempting that. They questioned him and, since he had killed two or three of their fellows, used methods which cost him a couple of teeth and a sleepless night. He told them his name and address, but little else.

Orders came the following day. Naysmith was bundled into another jet and flown eastward. Near the destination, the jet was traded for an ordinary, inconspicuous airboat. They landed after dark on the grounds of a large new mansion in western Pennsylvania—Naysmith recalled that Roger Wade lived here—and he was led inside. There was a soundproofed room with a full battery of interrogation machines under the residential floors. The prisoner was put into a chair already equipped with straps, fastened down, and left for a while to ponder his situation.

He sighed and attempted to relax,

leaning back against the metal of the chair. It was an uncomfortable seat, cold and stiff as it pressed into his naked skin. The room was long and low-ceilinged, barren in the white glare of high-powered fluoros, and the utter stillness of it muffled his breath and heartbeat. The air was cool, but somehow that absorbent quiet choked him. He faced the impassive dials of a lie detector and an electric neurovibrator, and the silence grew and grew.

His head ached, and he longed for a cigarette. His eyelids were sandy with sleeplessness and there was a foul taste in his mouth. Mostly, though, he thought of Jeanne Donner.

Presently the door at the end of the room opened and a group of people walked slowly toward him. He recognized Wade's massive form in the van. Behind him trailed a bearded man with a lean, sallow face; a young chap thin as a rail, his skin dead white and his hands clenching and unclenching nervously; a gaunt and homely woman; and a squat, burly subordinate whom he did not know but assumed to be an S-man in Wade's pay. The others were familiar to Service dossiers: Lewin, Wade's personal physician; Rodney Borrow, his chief secretary; Marta Jennings, Americanist organizer. There was death in their eyes.

Wade proceeded quietly up toward Naysmith. Borrow drew a chair for him and he sat down in it and took out a cigarette. Nobody spoke till he had it lighted. Then he blew the smoke in

Naysmith's direction and said gently: "According to the official records, you really are Norbert Naysmith of California. But tell me, is that only another false identity?"

Naysmith shrugged. "Identity is a philosophical basic," he answered. "Where does similarity leave off and identity begin?"

Wade nodded slowly. "We've killed you at least once, and I suspect more than once. But are you Martin Donner, or are you his twin? And in the latter case, how does it happen that you two—or you three, four, five, ten thousand—are *completely* identical?"

"Oh, not quite," said Naysmith.

"No-o-o. There are the little scars and peculiarities due to environment—and habits, language, accent, occupation. But for police purposes you and Donner are the same man. How was it done?"

Naysmith smiled. "How much am I offered for that information?" he parried. "As well as other information you know I have?"

"So." Wade's eyes narrowed. "You weren't captured—not really. You gave yourself up."

"Maybe. Have you caught anyone else yet?"

Wade traded a glance with the Security officer. Then, with an air of decision, he said briskly: "An hour ago, I was informed that a man answering your description had been picked up in Minnesota. He admitted to being one Juho Lampi of Finland,



and I'm inclined to take his word for it though we haven't checked port-of-entry records yet. How many more of you can we expect to meet?"

"As many as you like," said Naysmith. "Maybe more than that."

"All right. You gave yourself up. You must know that we have no reason to spare your life—or lives. What do you hope to gain?"

"A compromise," answered Naysmith. "Which will, of course, involve our release."

"How much are you willing to tell us now?"

"As little as possible, naturally. We'll have to bargain."

Stall! Stall for time! The message from

Rio has got to come soon—it's got to, or we're all dead men.

Borrow leaned over his master's shoulder. His voice was high and cracked, stuttering just a trifle: "How will we know you're telling the truth?"

"How will you know that even if you torture me?" shrugged Naysmith. "Your bird dogs must have reported that I've been immunized to drugs."

"There are still ways," said Lewin. His words fell dull in the muffling silence. "Prefrontal lobotomy is usually effective."

Yes, this is the enemy. These are the men of darkness. These are the men who in other days sent heretics to burning, or

fed the furnaces of Belsen, or stuffed the rockets with radioactive death. Now they're opening skulls and slashing brains across. Argue with them! Let them kick and slug and whip you, but don't let them know—

"Our bargain might not be considered valid if you do that."

"The essential element of a bargain," said Wade pompously, "is the free will and desire of both parties. You're not free."

"But I am. You've killed one of me and captured two others. How do you know the number of me which is still running loose, out there in the night?"

Borrow and Jennings flickered uneasy eyes toward the smooth bare walls. The woman shuddered, ever so faintly.

"We needn't be clumsy about this," said Lewin. "There's the lie detector, first of all—its value is limited, but this man is too old to have had Synthesis training, so he can't fool it much. Then there are instruments that make a man quite anxious to talk. I have a chlorine generator here, Naysmith. How would you like to breathe a few whiffs of chlorine?"

"Or just a vise—applied in the right place," snapped Jennings.

"Hold up a minute," ordered Wade. "Let's find out how much he wants to reveal without such persuasion."

"I said I'd trade information, not give it away," said Naysmith. He wished the sweat weren't running

down his face and body for all of them to see. The reek of primitive, uncontrollable fear was sharp in his nostrils—not the fear of death, but of the anguish and mutilation which were worse than oblivion.

"What do *you* want to know?" snapped the Security officer contemptuously.

"Well," said Naysmith, "first off, I'd like to know your organization's purpose."

"What's that?" Wade's heavy face blinked at him, and an angry flush mottled his cheeks. "Let's not play crèche games. You know what we want."

"No, seriously, I'm puzzled." Naysmith forced mildness into his tones. "I realize you don't like the *status quo* and want to change it. But you're all well off now. What do you hope to gain?"

"What— That will do!" Wade gestured to the officer, and Naysmith's head rang with a rock-fisted buffet. "We haven't time to listen to your bad jokes."

Naysmith grinned viciously. If he could get them mad, play on those twisted emotions till the unreasoning thalamus controlled them—it would be hard on him, but it would delay their real aims. "Oh, I can guess," he said. "It's personal, isn't it? None of you really know what's driving you to this—except for the stupid jackals who're in with you merely because it pays better than any work they could

get on their own merits. Like you, for instance." He glanced at the S-man and sneered deliberately.

"Shut up!" This time the blow was to his jaw. Blood ran thinly out of his mouth, and he sagged a little against the straps that held him. But his voice lifted raggedly.

"Take Miss Jennings, for one. Not that I would, even if you paid me. You're all twisted up inside, aren't you—too ugly to get a man, too scared of yourself to get a surgical remodeling. You're trying your clumsy best to sublimate it into patriotism—and what kind of symbol is a flagpole? I notice it was you who made that highly personal suggestion about torturing me."

She drew back, and there was the rage of a whipped animal in her. The S-man took out a piece of hose, but Wade gestured him away. The leader's face had gone wooden.

"Or Lewin—another case of psychotic frustration." Naysmith smiled, a close-lipped and unpleasant smile of bruised lips, at the doctor. "I warrant you'd work for free if you hadn't been hired. A two-bit sadist has trouble finding outlets these days.

"Now we come to Rodney Borrow."

"Shut up!" cried the thin man. He edged forward. Wade swept him back with a heavy arm.

"Exogene!" Naysmith's smile grew warm, almost pitying. "It's too bad that human exogenesis was developed

during the Years of Madness, when moral scruples went to hell and scientists were as fanatical as everyone else. They grew you in a tank, Borrow, and your pre-natal life, which every inherited instinct said should be warm and dark and sheltered, was one hell of a study—bright lights, probes, microslides taken of your tissues—They learned a lot about the human fetus, but they should have killed you instead of letting such a pathetic quivering mass of psychoses walk around alive. If you could call it life, Exogene."

Borrow lunged past Wade. There was slaver running from his lips, and he clawed for Naysmith's eyes. The S-man pulled him back and suddenly he collapsed, weeping hysterically. Naysmith shuddered beneath his skin. *There but for the grace of God—*

"And how about myself?" asked Wade. "These amateur analyses are most amusing. Please continue."

"Guilt drive. Overcompensation. The Service has investigated your childhood and adolescent background and—"

"And?"

"Come on, Roger. It's fun. It won't hurt a bit."

The big man sat stiff as an iron bar. For a long moment there was nothing, no sound except Borrow's sobs, no movement, and his face turned gray.

When he spoke, it was as if he were strangling: "I think you'd better start that chlorine generator, Lewin."

"With pleasure!"

Naysmith shook his head. "And you people want to run things," he murmured. "We're supposed to turn over a world slowly recovering its sanity to the likes of you."

The generator began to hiss and bubble at his back. He could have turned his head to watch it, but that would have been a defeat. And he needed every scrap of pride remaining in this ultimate loneliness.

"Let me run the generator," whispered Borrow.

"No," said Lewin. "You might kill him too fast."

"Maybe we should wait till they bring this Lampi here," said Jennings. "Let him watch us working Naysmith over."

Wade shook his head. "Maybe later," he said.

"I notice that you still haven't tried to find out what I'm willing to tell you without compulsion," interjected Naysmith.

"Well, go ahead," said Wade in a flat voice. "We're listening."

A little time, just a little more time, if I can spin them a yarn—

"Etienne Fourre has more resources than you know," declared Naysmith. "A counterblow has been prepared which will cost you dearly. But since it would also put quite a strain on us, we're willing to discuss—if not a permanent compromise, for there can obviously be none, at least an armistice. That's why—"

A chime sounded. "Come in," said Wade loudly. His voice activated the door and a man entered.

"Urgent call for you, Mr. Wade," he reported. "Scrambled."

"All right." The leader got up. "Hold off on that chlorine till I get back, Lewin." He went out.

When the door had closed behind him, Lewin said calmly: "Well, he didn't tell us to refrain from other things, did he?"

They took turns using the hose. Naysmith's mind grew a little hazy with pain. But they dared not inflict real damage, and it didn't last long.

Wade came back. He ignored Lewin, who was hastily pocketing the truncheon, and said curtly: "We're going on a trip. All of us. Now."

The word had come. Naysmith sank back, breathing hard. Just at that instant, the relief from pain was too great for him to think of anything else. It took him several minutes to start worrying about whether Peter Christian's logic had been correct, and whether the Service could fulfill its part, and even whether the orders that came to Wade had been the right ones.

XII.

It was late afternoon before Barney Rosenberg had a chance to talk with Jeanne Donner, and then it was she who sought him out. He had wandered from the cabin after lunch, scrambling

along the mountainside and strolling through the tall forest. But Earth gravity tired him, and he returned in a few hours. Even then, he didn't go back to the cabin, but found a log near the rim of the gorge and sat down to think.

So this was Earth.

It was a cool and lovely vision which opened before him. The cliffs tumbled down in a sweep of gray and slaty blue, down and down into the huge sounding canyon of the river. On the farther side, the mountain lifted in a mist of dim purple, up to its sun-blazing snow and the vastness beyond. There were bushes growing on the slopes that fell riverward, a gallantry of green blurring the severe rock, here and there a cluster of berries like fire. Behind Rosenberg and on either side were the trees, looming pine in a cavern of shadow, slim whispering beech, ash with the streaming, blinding, raining sunlight snared in its leaves. He had not remembered how much color there was on this planet.

And it was alive with sound. The trees murmured. The noise of the river drifted up, cold and fresh and boisterous. Mosquitoes buzzed thinly around his ears. A bird was singing—he didn't know what kind of bird, but it had a wistful liquid trill that haunted his thoughts, and another answered in whistles, and somewhere a third was chattering and chirping its gossip of the sun. A squirrel darted past like a red comet, and he heard the tiny scab-

ble of its claws.

And the smells—the infinite living world of odors, pine and mold and wild flowers and the river mist! He had almost forgotten he owned a sense of smell, in the tanked sterility of Mars.

Oh, his muscles ached and he was lonely for the grim bare magnificence of the deserts and he wondered how he would ever fit into this savage world of men against men. But still—Earth was home, and a billion years of evolution could not be denied.

Some day Mars would be a full-grown planet and its people would be rich and free. Rosenberg shook his head, smiling a little. Poor Martians!

There was a light footstep behind him. He turned and saw Jeanne Donner approaching. She had on a light blouse-and-slack outfit which didn't hide the grace of her or the weariness, and the sun gleamed darkly in her hair. Rosenberg stood up with a feeling of awkwardness.

"Please sit down." Her voice was grave, somehow remote. "I'd like to join you for a little while, if I may."

"By all means." Rosenberg lowered himself again to the mossy trunk. It was cool and yielding, a little damp, under his hand. Jeanne sat beside him, elbows on knees. For a moment she was quiet, looking over the sun-flooded land. Then she took out a pack of cigarettes and held them toward the man. "Smoke?" she asked.

"Uh . . . no, thanks. I got out of

the habit on Mars. Oxygen's too scarce, usually—we chew instead, if we can afford tobacco at all."

She lit a cigarette for herself and drew hard on it, sucking in her cheeks. He saw how fine the underlying bony structure was. Well—Stef had always picked the best women, and gotten them.

"We'll rig a bed for you," she said. "Cut some spruce boughs and put them under a sleeping bag. Makes a good doss."

"Thanks." They sat without talking for a while. The cigarette smoke blew away in ragged streamers. Rosenberg could hear the wind whistling and piping far up the canyon.

"I'd like to ask you some questions," she said at last, turning her face to him. "If they get too personal, just say so."

"I've nothing to hide—worse luck." He tried to smile. "Anyway, we don't have those privacy notions on Mars. They'd be too hard to maintain under our living conditions."

"They're a recent phenomenon on Earth, anyway," she said. "Go back to the Years of Madness, when there was so much eccentricity of all kinds, a lot of it illegal—" She threw the cigarette to the ground and stamped it savagely out with one heel. "I'm going to forget my own conditioning, too. Ask me anything you think is relevant. We've got to get to the truth of this matter."

"If we can. I'd say it certainly

was a thoroughly guarded secret."

"Listen," she said between her teeth, "my husband was Martin Donner. We were married three and a half years—and I mean married. He couldn't tell me much about his work, I knew he was really an Un-man and that his engineering work was only a blind, and that's about all he ever told me. Obviously, he never said a word about having—duplicates. But leaving that aside, we were in love and we got to know each other as well as two people can in that length of time. More than just physical appearance—it was also a matter of personality, reaction-patterns, facial expressions, word-configuration choices, manner of moving and working, all the million little things which fit into one big pattern. An overall gestalt, understand?"

"Now this man . . . what did you say his name was—?"

"Naysmith. Norbert Naysmith. At least, that's what he told me. The other fellow was called Lampi."

"I'm supposed to believe that Martin died and that this—Naysmith—was substituted for him," she went on hurriedly. "They wanted to get me out of the house fast, couldn't stop to argue with me, so they sent in this ringer. Well, I saw him there in the house. He escaped with me and the boy. We had a long and uneasy flight together up here . . . you know how strain will bring out the most basic

characteristics of a person. And he fooled me completely. Everything about him was Martin. *Everything!* Oh, I suppose there were minor variations, but they must have been very minor indeed. You can disguise a man these days, with surgery and cosmetics and whatnot, so that he duplicates almost every detail of physique. But can surgery give him the same funny slow way of smiling—the same choice of phrases—the same sense of humor—the same way of picking up his son and talking to him—the same habit of quoting Shakespeare, and way of taking out a cigarette and lighting it one-handed, and corner-cutting way of piloting an airboat—the same *soul*? Can they do that?"

"I don't know," whispered Rosenberg. "I shouldn't think so."

"I wouldn't really have believed it," she said. "I'd have thought he was trying to tell me a story for some unknown reason. Only there was that other man with him, and except for their hair being dyed I couldn't tell them apart—and you were along too, and seemed to accept the story—" She clutched his arm. "Is it true? Is my husband really dead?"

"I don't know," he answered grayly. "I think they were telling the truth, but how can I know?"

"It's more than my own sanity," she said in a tired voice. "I've got to know what to tell Bobby. I can't say anything now."

Rosenberg looked at the ground.

His words came slowly and very soft: "I think your best bet is to sit tight for a while. This is something which is big—maybe the biggest secret in the universe. And it's either very good or very bad. I'd like to believe that it was good."

"But what do you know of it?" She held his eyes with her own, he couldn't look away, and her hand gripped his arm with a blind force. "What can you tell me? What do you think?"

He ran a thin, blue-veined hand through his grizzled hair and drew a breath. "Well," he said, "I think there probably are a lot of these—identical Un-men. We know that there are . . . were . . . three, and I got the impression there must be more. Why not? That Lampi was a foreigner, he had an accent, so if they're found all over the world—"

"Un-man." She shivered a little, sitting there in the dappled shade and sunlight. "It's a hideous word. As if they weren't human."

"No," he said gently. "I think you're wrong there. They . . . well, I knew their prototype, and he was a *man*."

"Their . . . no!" Almost, she sprang to her feet. With an effort, she controlled herself and sat rigid. "*Who was that?*"

"His name was Stefan Rostomily. He was my best friend for fifteen years."

"I . . . don't know . . . never

heard of him." Her tones were thick.

"You probably wouldn't have. He was off Earth all that time. But his name is still a good one out on the planets. You may not know what a Rostomily valve is, but that was his invention—he tinkered it up one week for convenience, sold it for a good sum, and binged that away." Rosenberg chuckled dimly. "It made history, that binge. But the valve has meant a lot to Martian colonists."

"Who was he?"

"He never said much about his background. I gathered he was a European, probably Czech or Austrian. He must have done heroic things in the underground and guerrilla fighting during the Third War. But it kind of spoiled him for a settled career—by the time things began to calm a little, he'd matured in chaos and it was too late to do any serious studying. He drifted around Earth for a while, took a hand in some of the fighting that still went on here and there . . . he was with the U.N. forces that suppressed the Great Jihad, I know. But he got sick of killing, too, as any sane man would—and in spite of his background, Mrs. Donner, he was basically one of the sanest men I ever knew. So at last he bluffed his way onto a spaceship . . . didn't have a degree, but he learned engineering in a hurry, and he was good at it. I met him on Venus, when I was prospecting around; I may not look it, but I'm a geologist and mineralogist.

We ended up on Mars. Helped build Sandy Landing, helped in some of the plantation development work, prospected, mapped and surveyed and explored—we must've tried everything. He died five years ago. A cave-in. I buried him there on Mars."

The trees about them whispered with wind.

"And these others are . . . his sons?" she murmured. She was trembling a little now.

Rosenberg shook his head. "Impossible. These men are *him*. Stef in every last feature, come alive and young again. No child could ever be that close to his father."

"No. No, I suppose not."

"Stef was a human being, through and through," said Rosenberg. "But he was also pretty close to being a superman. Think of his handicaps—childhood gone under the Second War and its aftermath, young manhood gone in the Third War, poor, self-educated, uprooted. And still he was balanced and sane, gentle except when violence was called for—then he was a hellcat, I tell you. Men and women loved him—he had that kind of personality. He'd picked up a dozen languages, and he read their literatures with more appreciation and understanding than most college professors. He knew music and composed some good songs of his own—rowdy but good—they're still being sung out on Mars. He was an artist, did some fine

murals for several buildings, painted the Martian landscape like no camera has ever shown it—though he was good with a camera, too. I've already told you about his inventiveness, and he had clever hands that a machine liked. His physique stood up to anything—he was almost sixty when he died and could still match any boy of twenty. He . . . why go on? He was everything, and good at everything."

"I know," she answered. "Martin was the same way." Her brief smile was wistful. "Believe me, I had a time hooking him. Real competition there." After a moment she added thoughtfully: "There must be a few such supermen walking around in every generation. It's just a matter of a happy genetic accident, a huge preponderance of favorable characteristics appearing in the same zygote, a highly intelligent mesomorph. Some of them go down in history. Think of Michelangelo, Vespucci, Raleigh—men who worked at everything, science, politics, war, engineering, exploration, art, literature. Others weren't interested in prominence, or maybe they had bad luck. Like your friend."

"I don't know what the connection is with these Un-men," said Rosenberg. "Stef never said a word to me—but of course, he'd've been sworn to secrecy, or it might even have been done without his knowledge. Only what was done? Matter duplication? I don't think so—if the U.N. had matter duplication, it wouldn't be in the fix

it is now. What was done—and *why?*"

Jeanne didn't answer. She was looking away now, across the ravine to the high clear beauty of mountains beyond. It was blurred in her eyes. Suddenly she got up and walked away.

XIII.

There was a night of stars and streaming wind about the jet. The Moon was low, throwing a bridge of broken light across the heaving Atlantic immensity. Once, far off, Naysmith saw a single meteoric streak burning upward, a rocket bound for space. Otherwise he sat in darkness and alone.

He had been locked into a tiny compartment in the rear of the jet. Wade and his entourage, together with a pilot and a couple of guards, sat forward; the jet was comfortably furnished, and they were probably catching up on their sleep. Naysmith didn't want a nap, though the weakness of hunger and his injuries was on him. He sat staring out of the port, listening to the mighty rush of wind and trying to estimate where they were.

The middle Atlantic, he guessed, perhaps fifteen degrees north latitude. If Christian's prognosis of Besser's reactions was correct, they were bound for the secret world headquarters of the gang, but Wade and the others hadn't told him anything. They were over the high seas now, the great unrestful wilderness which ran across

three-fourths of the planet's turning surface, the last home on Earth of mystery and solitude. Anything could be done out here, and when fish had eaten the bodies who would ever be the wiser?

Naysmith's gaze traveled to the Moon, riding cold above the sea. Up there was the dominion over Earth. Between the space-station observatories and the rocket bases of the Lunar Guard, there should be nothing which the forces of sanity could not smash. The Moon had not rained death since the Third War, but the very threat of that monstrous fist poised in the sky had done much to quell a crazed planet. If the Service could tell the Guard where to shoot—

Only it couldn't. It never could, because this rebellion was not the armed uprising of a nation with cities and factories and mines. It was a virus within the body of all human-kind. You wouldn't get anywhere bombing China, except to turn four hundred million innocent victims who had been your friends against you—because it was a small key group in the Chinese government which was conspiring against sanity.

You can blast a sickness from outside, with drugs and antibiotics and radiation. But the darkness of the human mind can only be helped by a psychiatrist—the cure must come from within itself.

If the U.N. were—not brought tumbling down, but slowly eaten

away, mutilated and crippled and demoralized—what would there be to shoot at? Sooner or later, official orders would come disbanding its police and Lunar Guard. Or there were other ways to attack those Moon bases. If they didn't have the Secret Service to warn them, it would be no trick for an enemy to smuggle military equipment to the Moon surface itself and blow them apart from there.

And in the end—what? Complete and immediate collapse into the dog-eat-dog madness which had come so close once to ruining all civilization? (*Man won't get another chance. We were luckier than we deserved the last time.*) Or a jerry-built world empire of oppression, the stamping out of that keen and critical science whose early dawn-light was just beginning to show man a new path, a thousand-year nightmare of humanity turned into an ant hill? There was little choice between the two.

Naysmith sighed and shifted on the hard bare seat. They could have had the decency to give him some clothes and a cigarette—a sandwich at the very least. Only, of course, the idea was to break down his morale as far as possible.

He tried again, for the thousandth time, to evaluate the situation, but there were too many unknowns and intangibles. It would be stupid to insist that tonight was a crisis point in human history. It could be—then

again, if this attempt of the Brotherhood ended in failure, if the Brothers themselves were all hunted down, there might come some other chance, some compensating factor — *Might!* But passive reliance on luck was ruin.

And in any case, he thought bleakly, tonight would surely decide the fate of Norbert Naysmith.

The jet slanted downward, slowing as it wailed out of the upper air. Naysmith leaned against the wall, gripping the edge of the port with manacled hands, and peered below. Moonlight washed a great rippling mass of darkness, and in the center of it something which rose like a metal cliff.

A sea station!

I should have guessed it, thought Naysmith wildly. His brain felt hollow and strange. *The most logical place, accessible, mobile, under the very nose of the world but hidden all the same. I imagine the Service has considered this possibility—only how could it check all the sea stations in existence? It isn't even known how many there are.*

This one lay amidst acres of floating weed. Probably one of the specially developed sea plants with which it was hoped to help feed an overcrowded planet; or maybe this place passed itself off as an experiment station working to improve the growth. In either case, ranch or laboratory, Naysmith was sure that its announced activities were really carried out, that

there was a complete working staff with all equipment and impeccable dossiers. The gang's headquarters would be underneath, in the submerged bowels of the station.

An organization like this had to parallel its enemy in most respects. Complex and world-wide—no, System-wide, if it really included Pilgrim fanatics who wanted to take over all Mars—it would have to keep extensive records, have some kind of communications center— *This is it! This is their brain!*

The shiver of excitement faded into a hard subsurface tingle. A dead man had no way of relaying his knowledge to Fourre.

There was a landing platform at one end of the great floating structure. The pilot brought his jet down to a skillful rest, cut the motors, and let silence fall. Naysmith heard the deep endless voice of the sea, rolling and washing against the walls. He wondered how far it was to the next humanity. Far indeed. Perhaps they were beyond the edge of death.

The door opened and light filtered into the compartment. "All right, Naysmith," said the guard. "Come along."

Obediently, the Un-man went out between his captors to stand on the platform. It was floodlit, cutting off the view of the ocean surging twenty or thirty feet under its rails. The station superstructure, gymbal-mounted and gyro-stabilized above its great

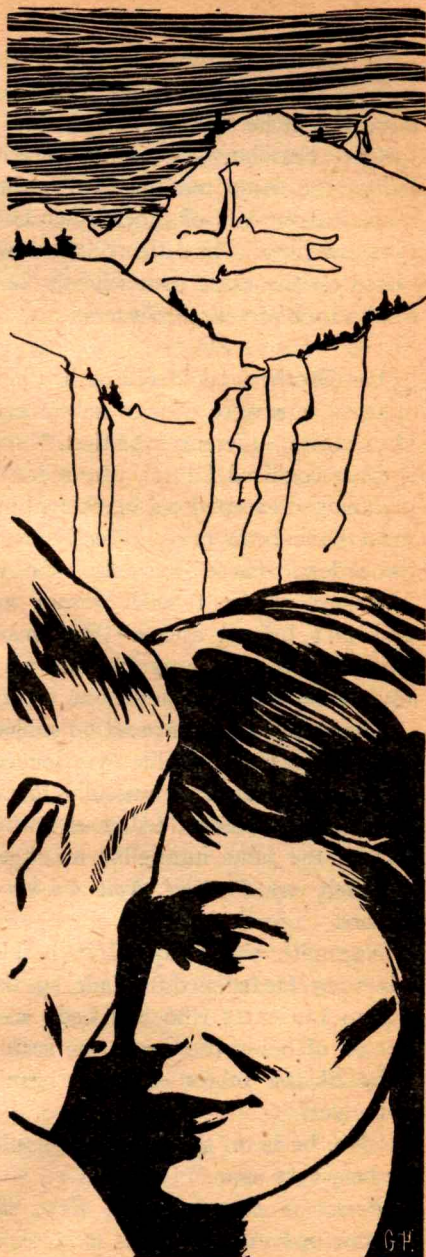
caissons, wouldn't roll much even in the heaviest weather. There were two other jets standing nearby. No sign of armament, though Naysmith was sure that missile tubes were here in abundance and that each mechanic carried a gun.

The wind was chill on his body as he was led toward the main cabin. Wade strode ahead of him, cloak flapping wildly in the flowing, murmuring night. To one side, Naysmith saw Borrow's stiff white face and the sunken expressionlessness of Lewin. Perhaps those two would be allowed to work him over.

They entered a short hallway. At the farther end, Wade pressed his hand to a scanner. A panel slid back in front of an elevator cage. "In," grunted one of the S-men.

Naysmith stood quietly, hemmed into a corner by the wary bodies of his guards. He saw that Borrow and Jennings were shivering with nervous tension. A little humorless smile twisted his mouth. Whatever else happened, the Brotherhood had certainly given the enemy a jolt.

The elevator sighed to a halt. Naysmith was led out, down a long corridor lined with doors. One of them stood ajar, and he saw walls covered with micro-file cabinets—yes, this must be their archive. A besmoked man went the other way, carrying a computer tape. Unaided human brains were no longer enough even for those who would overthrow society. Too



big, too big.

At the end of the hall, Naysmith was ushered into a large room. It was almost as if he were back in Wade's torture chamber—the same bright lights, the same muffling walls, the same instruments of inquisition. His eyes swept its breadth until they rested on the three men who sat behind a rack of neuroanalyzers.

The Brothers could tell each other apart—there were enough subtle environmental differences for that. Naysmith recognized Lampi, who seemed undamaged except for a black eye; he must have been taken directly here on orders. There was also Carlos Martinez of Guatemala, whom he had met before, and a third man whom he didn't recognize but who was probably South American.

They smiled at him, and he smiled back. Four pairs of blue eyes looked out of the same lean muscular faces, four blond heads nodded, four brains flashed the same intangible message: *You too, my Brother? Now we must endure.*

Naysmith was strapped in beside Martinez. He listened to Wade, speaking to Lucientes who had been suspected of being the Argentine sector chief of the rebels: "Besser hasn't come yet?"

"No, he is on the way. He should be here very soon."

Besser is the real head, then, the organizing brain—and he is on his way!

The four Brothers held themselves rigid, four identical faces staring uncannily ahead, not daring to move or exchange a glance. *Besser is coming!*

Wade took a restless turn about the room. "It's a weird business," he said thinly. "I'm not sure I like the idea of having all four together—in this very place."

"What can they do?" shrugged Lucientes. "My men captured Villareal here in Buenos Aires yesterday. He had been an artist—supposedly—and dropped out of sight when word first came about a fugitive Un-man answering that description. But he made a childish attempt to get back to his apartment and was arrested without difficulty. Martinez was obtained in Panama City with equal ease. If they are that incompetent—"

"But they aren't! They're anything but!" Wade glared at the prisoners. "This was done on purpose, I tell you. Why?"

"I already said—" Naysmith and Villareal spoke almost simultaneously. They stopped, and the Argentine grinned and closed his mouth. "I told you," Naysmith finished. "We wanted to bargain. There was no other quick and expedient way of making the sort of contact we needed."

"Were four of you needed?" snapped Wade. "Four valuable men?"

"Perhaps not so valuable," said Lewin quietly. "Not if there are—any number of them still at large."

"They are not supernatural!" pro-

tested Lucientes. "They are flesh and blood—they can feel pain, and cannot break handcuffs. I know! Nor are they telepaths or anything equally absurd. They are—" His voice faltered.

"Yes?" challenged Wade. "They are what?"

Naysmith drew into himself. There was a moment of utter stillness. Only the heavy breathing of the captors—the captors half terrified by an unknown, and all the more vicious and deadly because of that—had voice.

The real reason was simple, thought Naysmith—so simple that it defeated those tortuous minds. It had seemed reasonable, and Christian's logic had confirmed the high probability, that one man identical with the agent who had been killed would be unsettling enough, and that four of them, from four different countries, would imply something so enormous that the chief conspirator would want them all together in his own strongest and most secret place—that he himself would want to be there at the questioning.

Only—what happened next?

"They aren't human!" Borrow's voice was shrill and wavering. "They can't be—not four or five or a thousand identical men. The U.N. has its own laboratories, Fourre could easily have had secret projects carried out—"

"So?" Lewin's eyes blinked sardonically at the white face.

"So they're robots . . . androids . . . synthetic life . . . whatever you want to call it. Test-tube monsters!"

Lewin shook his head, grimly. "That's too big a stride forward," he said. "Science—no human science will be able to do that for centuries to come. You don't appreciate the complexity of a living human being—and all our best efforts haven't yet synthesized even one functioning cell. I admit these fellows have something—superhuman—about them. They've done incredible things. But they can't be robots. It isn't humanly possible."

"*Humanly!*" screamed Borrow. "Is man the only scientific race in the universe? How about creatures from the stars? Who's the real power behind the U.N.?"

"That will do," snapped Wade. "We'll find all this out pretty soon." His look fastened harsh on Naysmith. "Let's forget this stupid talk of bargaining. There can be no compromise until one or the other party is done for."

That's right. The same thought quivered in four living brains.

"I—" Wade stopped and swung toward the door. It opened for two men who entered.

One was Arnold Besser. He was a small man, fine-boned, dark-haired, still graceful at seventy years of age. There was a flame in him that burned past the drab plainness of his features, the eerie light of fanaticism deep within his narrow skull. He nodded

curtly to the greetings and stepped briskly forward. His attendant came after, a big and powerful man in chauffeur's uniform, cat-quiet, his face rugged and expressionless.

Only . . . only . . . Naysmith's heart leaped wildly within him. He looked away from the chauffeur-guard, up into the eyes of Arnold Besser.

"Now, then." The chief stood before his prisoners, hands on hips, staring impersonally at them but with a faint shiver running beneath his pale skin. "I want to know you people's real motive in giving yourselves up. I've studied your 'vised dossiers, such as they are, on the way here, so you needn't repeat the obvious. I want to know everything else."

"The quality of mercy is not strained—" murmured Lampi. Naysmith's mind continued the lovely words. He needed their comfort, for here was death.

"The issues are too large and urgent for sparring," said Besser. There was a chill in his voice as he turned to Lewin. "We have four of them here, and presumably each of them knows what the others know. So we can try four different approaches. Suggestions?"

"Lobotomy on one," answered the physician promptly. "We can remove that explosive detonator at the same time, of course. But it will take a few days before he can be questioned, even under the best conditions, and

perhaps there has been some precaution taken so that the subject will die. We can try physical methods immediately on two of them, in the presence of each other. We had better save a fourth—just in case."

"Very well." Besser's gaze went to a white-jacketed man behind the prisoners. "You are the surgeon here. Take one away and get to work on his brain."

The doctor nodded and began to wheel Martinez's chair out of the room. Lewin started a chlorine generator. The chauffeur-guard leaned against a table, watching with flat blank eyes.

The end? Good night, then, world, sun and moon and wind in the heavens, good night, Jeanne.

A siren hooted. It shrilled up and down a saw-edged scale, ringing in metal and glass and human bones. Besser whirled toward a communicator. Wade stood heavy and paralyzed. Jennings screamed.

The room shivered, and they heard the dull crumping of an explosion. The door opened and a man stumbled in, shouting something. His words drowned in the rising whistle and bellow of rocket missiles.

Suddenly there was a magnum gun in the chauffeur's hand. It spewed a rain of slugs as he crouched, swinging it around the chamber. Naysmith saw Besser's head explode. Two of the guards had guns halfway out when

the chauffeur cut them down.

The communicator chattered up on the wall, screaming something hysterical about an air attack. The chauffeur was already across to the door switch. He closed and locked the barrier, jumped over Wade's body, and grabbed for a surgical saw. It bit at the straps holding Naysmith, drawing a little blood. Lampi, Martinez, and Villareal were whooping aloud.

The chauffeur spoke in rapid Brazilo-Portuguese: "I'll get you free. Then take some weapons and be ready to fight. They may attack us in here, I don't know. But there will be paratroops landing as soon as our air strength has reduced their defenses. We should be able to hold out till then."

It had worked. The incredible, desperate, precarious plan had worked. Besser, in alarm and uncertainty, had gone personally to his secret headquarters. He had been piloted by his trusted gunman as usual. Only—Fourre's office would long have known about that pilot, studied him, prepared a surgically disguised duplicate from a Brazilian Un-man and held this agent in reserve. When Christian's message came, the chauffeur had been taken care of and the Un-man had replaced him—and been able to slip a radio tracer into Besser's jet—a tracer which the Rio-based U.N. police had followed.

And now they had the base!

Naysmith flung himself out of the

chair and snatched a gun off the floor. He exchanged a glance with his rescuer, a brief warm glance of kinship and comradeship and belongingness. Even under the disguise and the carefully learned mannerisms, there had been something intangible which he had known—or was it only the fact that the deliverer had moved with such swift and certain decision?

"Yes," said the Brazilian unnecessarily. "I, too, am a Brother."

XIV.

There was one morning when Naysmith came out of his tent and walked down to the sea. This was in Northwest National Park, the new preserve which included a good stretch of Oregon's lovely coast. He had come for rest and solitude, to do some thinking which seemed to lead nowhere, and had stayed longer than he intended. There was peace here—in the great rocky stretch of land, the little sandy nooks between, the huge gray loneliness of ocean, and the forest and mountains behind. Not many people were in the park now, and he had pitched his tent remote from the camping grounds anyway.

It was over. The job was finished. With the records of Besser's headquarters for clues and proof, Fourre had been in a position to expose the whole rotten conspiracy. Nobody had cared much about the technical illegality of his raid. Several govern-

ments fell—the Chinese had a spectacularly bloody end—and were replaced with men closer to sanity. Agents had been weeded out of every regime—even in America, Hessling was in jail and there was talk of disbanding Security altogether. The U.N. had a renewed prestige and power, a firmer allegiance from the peoples of the world. Happy ending?

No. Because it was a job which never really ended. The enemy was old and strong and crafty, it took a million forms and it could never quite be slain. For it was man himself—the darkness and madness and sorrow of the human soul, the revolt of a primitive animal against the unnatural and precarious state called civilization and freedom. Somebody would try again. His methods would be different, he might not have the same avowed goal, but he would be the enemy and the watchers would have to break him. *And who shall watch the watchmen?*

Security was a meaningless dream. There was no stability except in death. Peace and happiness were not a reward to be earned, but a state to be maintained with unending toil and grief.

Naysmith's thinking at the moment concerned personal matters. But there didn't seem to be any answer except the one gray command: Endure.

He crossed the beach, slipping on rocks and swearing at the chill damp wind. His plunge into the water was

an icy shock which only faded with violent swimming. But when he came out, he was tingling with a sharp-edged wakefulness.

Romeo, he thought, toweling himself vigorously, was an ass. Psychological troubles are no excuse for losing your appetite. In fact, they should heighten the old reliable animal pleasures. Mercurio was the real hero of that play.

He picked his way toward the tent, thinking of bacon and eggs. As he mounted the steep, rocky bank, he paused, scowling. A small airboat had landed next to his own. When he saw the figure which stood beside it, he broke into a run.

Jeanne Donner waited for him, gravely as a child. When he stood before her, she met his gaze steadily, mute, and it was he who looked away.

"How did you find me?" he whispered at last. He thought the fury of his heartbeat must soon break his ribs. "I dropped out of sight pretty thoroughly."

"It wasn't easy," she answered, smiling a little. "After the U.N. pilot took us back to the States, I pestered the life out of everyone concerned. Finally one of them forgot privacy laws and told me—I suppose on the theory that you would take care of the nuisance. I've been landing at every isolated spot in the park for the last two days. I knew you'd want to be alone."

"Rosenberg—?"

"He agreed to accept hypno-conditioning for a nice payment—since he was sure he'd never learn the secret anyway. Now he's forgotten that there ever was another Stefan Rostomily. I refused, of course."

"Well—" His voice trailed off. Finally he looked at her again and said harshly: "Yes, I've played a filthy trick on you. The whole Service has, I guess. Only it's a secret which men have been killed for learning."

She smiled again, looking up at him with a lilting challenge in her eyes. "Go ahead," she invited.

His hands dropped. "No. You've got a right to know this. I should never have . . . oh, well, skip it. We aren't complete fanatics. An organization which drew the line nowhere in reaching its aims wouldn't be worth having around."

"Thank you," she breathed.

"Nothing to thank me for. You've probably guessed the basis of the secret already, if you know who Rostomily was."

"And what he was. Yes, I think I know. But tell me."

"They needed a lot of agents for the Service—agents who could meet specifications. Somebody got acquainted with Rostomily while he was still on Earth. He himself wasn't trained, or interested in doing such work, but his heredity was wanted—the pattern of genes and chromosomes. Fourre had organized his secret research laboratories—it wasn't hard to

do, in the chaos of the Years of Madness. Exogenesis of a fertilized ovum was already an accomplished fact. It was only one step further to take a few complete cells from Rostomily and use them as . . . as a chromosome source for undifferentiated human tissue. Proteins are autocatalytic, you know, and a gene is nothing but a set of giant protein molecules.

"We . . . we Brothers, all of us—we're completely human. Except that our hereditary pattern is derived entirely from one person instead of from two and, therefore, duplicates its prototype exactly. There are thousands of us by now, scattered around the Solar System. I'm one of the oldest. There are younger ones coming up to carry on."

"Exogenesis—" She couldn't repress a slight shudder.

"It has a bad name, yes. But that was only because of the known experiments which were performed, with all their vicious prenatal probing. Naturally that would produce psychotics. *Our* artificial wombs are safer and more serene even than the natural kind."

She nodded then, the dark wings of her hair falling past the smooth ivory planes of her cheeks. "I understand. I see how it must be—you can tell me the details later. And I see why. Fourre needed supermen. The world was too chaotic and violent—it still is—for anything less than a brotherhood of supermen."

"Oh—look now!"

"No, I mean it. You aren't the entire Service, or even a majority of it. But you're the crack agents, the sword-hand—" Suddenly she smiled, lighting up the whole universe, and gripped his arm. Her fingers were cool and slender against his flesh. "And how wonderful it is! Remember . . . remember *King Henry the Fifth?*"

The words whispered from him:

*"And Crispin Crispian shall ne'er
go by,
From this day to the ending of the
world,
But we in it shall be remembered—
We few, we happy few, we band of
brothers—"*

After a long moment, he added wryly: "But we can't look for fame. Not for a long time yet. The first requirement of a secret agent is secrecy, and if it were known that our kind exists half our usefulness would be gone."

"Oh, yes. I understand." She stood quiet for a while: The wind blew her dress and hair about her, fluttering them against the great clean expanse of sea and forest and sky.

"What are you going to do now?" she asked.

"I'm not sure. Naturally, we'll have to kill the story of a wanted murderer answering our description. That won't

be hard. We'll announce his death resisting arrest, and after that . . . well, people forget. In a year or two it will all be gone. But of course several of us, myself included, will need new identities, have to move to new homes. I've been thinking of New Zealand."

"And it will go on—your work will go on. Aren't you ever lonely?"

He nodded, then tried to grin. "But let's not go on a crying jag. Come on and have breakfast with me."

"No . . . wait." She drew him back and made him face her. "Tell me—I want the truth now. You said, the last time, that you loved me. Was that true?"

"Yes," he said steadily. "But it doesn't matter. I was unusually vulnerable—I'd always been the cat who walks by himself, more so even than most of my Brothers. I'll get over it."

"Maybe I don't want you to get over it," she said.

He stood without motion for a thunderous century. A sea gull went crying overhead.

"You are Martin," she told him. "You aren't the same, not quite, but you're still Martin with another past. And Bobby needs a father and I—need you."

He couldn't find words, but they weren't called for anyway.

THE END

THE ANALYTICAL LABORATORY

The story-article "The Improbable Profession," in the September issue was not rated either as an article nor as a story — so that the Lab ratings are thrown off.

But while the "Improbable Profession" wasn't rated, exactly, after about half a dozen University Law departments, and various patent attorneys had written in gleefully asking for reprints, *Astounding* set a precedent; "Improbable Profession" is the first article that we've made available in reprint form.

The second item of interest is "Frontier of the Dark," Chandler's werewolf story. The rating doesn't tell the whole story; it is a mere mathematical averaging process, and doesn't adequately express the intensity of reactions. The story was greeted with howls — and the howls were just about equally divided between howls of anguish and howls of delight.

The answer, then, can only be that we'll drop werewolves from our diet. Since it makes some acutely unhappy, and isn't necessary to the enjoyment of anyone, that seems the sensible attitude.

Now: One added and important point. The authors will perhaps maintain this is the only really important point; we are instituting a new bonus policy, beginning with the April issue. This is forewarning.

The system will work as follows: we pay a standard 3¢ a word rate on stories. I will, however, pay either a 3½¢ or 4¢ bonus rate on stories I think exceptionally good. The bonus goes to the story, not merely to the author. How many stories a man has written isn't the test — it's how good a story has he written this time.

However, I'm not the Ultimate Critic; I have some ideas on science fiction, but the final answers aren't mine — they're yours. Wherefore, if I buy a story at 3¢, and the reader opinions say "that's the best in the issue!" — I'm wrong, obviously. The author then gets the additional 1¢ a word he earned, and I failed to pay originally.

Some of the stories you'll see in coming issues I've already paid 4¢ a word for; I'm not going to indicate in any way which ones I thought earned the bonus. To do so would, obviously, be prejudicing the voting. Doing it this way — the author will have the satisfaction of knowing that making first place in the reader's opinion is not an empty honor. And you can have the satisfaction that your sending in your praise or your condemnation is not an empty gesture; it will directly and effectively react on the authors. If an author really pleases you, you've got a way to help him appreciate your pleasure in a very real manner. How real? Well, beginning in April, Hal Clement has an 85,000 word serial. On a story that long, it would make a difference of \$850!

Finally — the September ratings.

<i>Place</i>	<i>Story</i>	<i>Author</i>	<i>Points</i>
1.	THE ENTREPRENEUR	Thomas Wilson	2.23
2.	FRONTIER OF THE DARK	A. Bertram Chandler	2.38
3.	NO MOON FOR ME	Walter M. Miller, Jr.	2.60
4.	DEMOTION	Robert Donald Locke	2.70

THE EDITOR,

THE FIRST POWER PILE

The following material is taken from a talk by Alfonso Tammaro, manager of Chicago Operations Office of the United States Atomic Energy Commission, delivered before a meeting of the American Society of Mechanical Engineers in Chicago on September 8, 1952. The text is nearly complete. For reasons of space saving some introductory remarks directed specifically to the ASME members have been dropped.

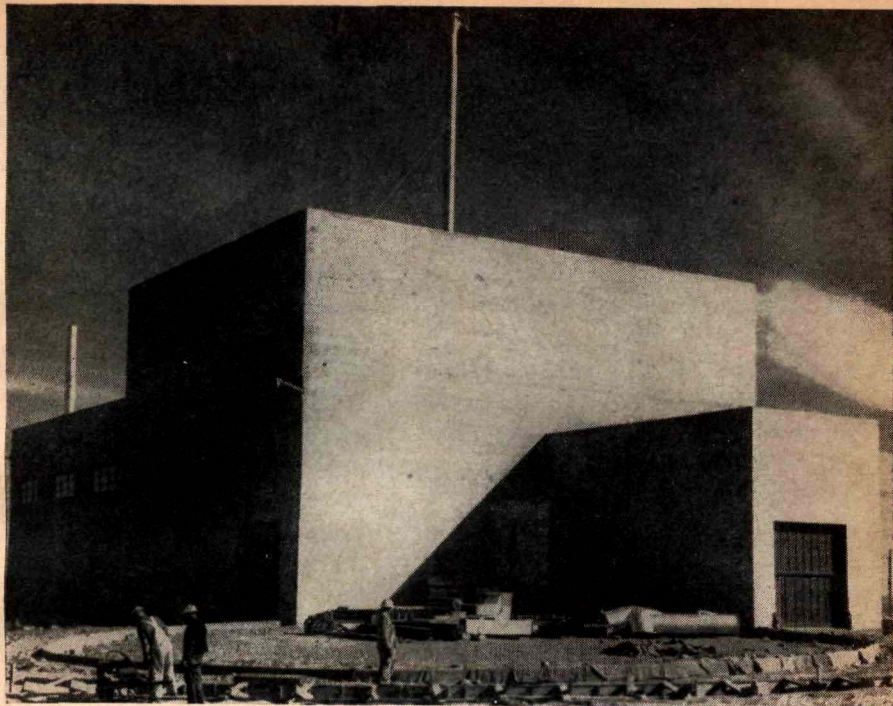
I might begin by discussing some situations in which we in the Commission have drawn upon the skills available in industry in general and of the mechanical engineers in particular. In our fundamental research work we face the need for engineering skill at every turn.

In atomic energy development we are confronted with problems that have never existed before and solution of these problems means starting from scratch in basic research work.

Harnessing the energy from the atom exposes some strange characteristics and introduces many requirements that are not apparent in conventional fields; there is one major requirement that is placed on all materials of construction that has heretofore been unknown, and that is, it must not possess the ability to capture neutrons easily. Let me explain: A chain reaction is possible because one

neutron is required to split an atom and more than one neutron is released in the process. However, neutrons are not only absorbed in uranium to cause fission, but unfortunately they are captured in all materials with which they come in contact. The capability of a material to "eat up" these neutrons varies in different materials.

Thus, it is apparent that in constructing a nuclear reactor, materials must be used that have a low adeptness for parasitically absorbing the neutrons in the reactor. In other words, *one is not only faced with the conventional problems of choosing materials such as the mechanical and physical properties of thermal conductivity, strength, melting points, et cetera, but also with the nuclear properties.* As fate would have it, it seems that the conventional materials possess undesirable nuclear properties, and it was therefore necessary to find materials



IDAHO FALLS OPERATIONS OFFICE

The Experimental Breeder Reactor, known as the EBR, is in this building at Idaho Falls, Idaho.

of construction that have never before been explored.

A good example of this is zirconium which possesses good characteristics for use in nuclear reactors because of its low neutron absorption and its good corrosion resistance. Prior to this time the use of zirconium was limited to very few applications such as the manufacture of plates for surgical purposes.

Moreover, even the normal impurities in materials can "eat up" sufficient quantities of neutrons to

make the chain reaction impossible to achieve. It is therefore necessary to purify such common materials as water and graphite on a large scale and to such an extent that heretofore methods of achieving such an exceptionally high degree of purity on a production scale were not known.

It is necessary, then, to go to extremes in exploring new materials and new processes. It is necessary to explore methods of handling ores that have an extremely low metal content. It is necessary to explore the metal-

lurgy of these new materials that have heretofore never been used as structural materials. Methods of fabricating them in suitable shapes, or alloying them with suitable materials, of bonding them, et cetera, to make them meet the strange requirements in a nuclear reactor must be found. They must be made to withstand irradiation damage; that is, the constant bombardment by neutrons and other radiation to which they are exposed.

Moreover, methods of chemically processing these new materials must be explored—*separating them from the fission products*, cladding, and other materials that have been formed in the reaction. This must be done after they have become deadly radioactive and cannot be handled except by remote control methods from behind thick shielding walls. Suitable remote control apparatus must be designed to perform these operations.

Some of the mechanical problems involve the unique control devices which must be developed to control the chain reaction, always standing by and ready to quench out in a matter of micro-seconds any possible reactor runaway that could result in an explosion or release of deadly radioactivity.

Pumps must be developed to pump radioactive solutions and stand up under the radioactive bombardment and corrosive nature of the solutions pumped. Pumps must be developed

to pump hot radioactive liquid metals at extremely high temperatures. Seals must be so tight that even minute quantities of radioactive materials or expensive materials such as heavy water do not leak out.

Industrial Applications of Atomic Energy

I have briefly attempted to point out some of the reasons for and the magnitude of the research and development effort, and monetary expenditures necessary in the atomic energy business. Let us now look at some of the many accomplishments that have been made in the past directed toward the industrial applications of atomic energy. One of the important potential uses is the production of power with a reactor heat source.

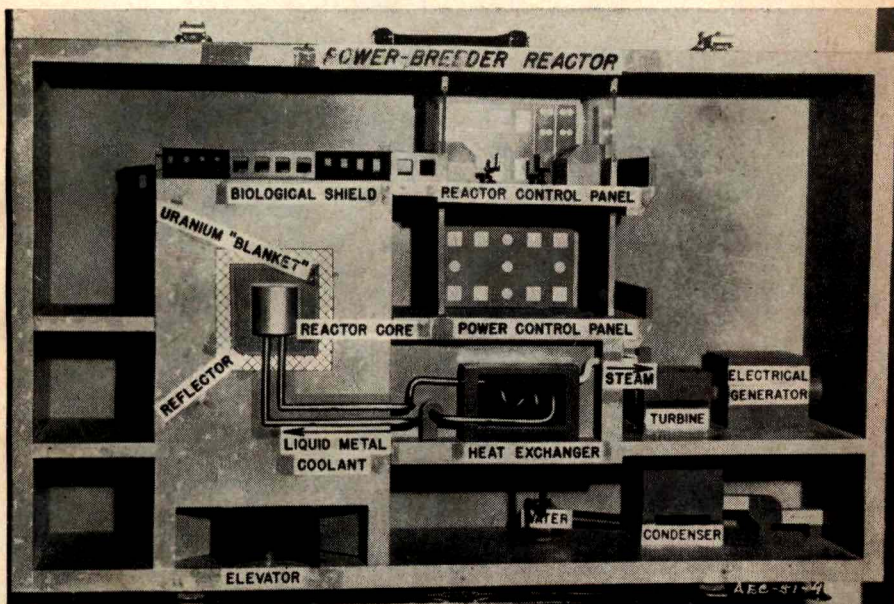
Well underway at this time is a large program whose objective is to utilize this heat source in power plants for ship propulsion. The power requirements of ships and of naval vessels, in particular, are high. A large carrier, for example, may well have a propulsion plant capable of producing over 200,000 kw. So, the progress made in this program can be expected to contribute greatly to the technology of power producing reactors in general.

The nuclear ship propulsion program, which is being carried forward jointly by the Navy and the Atomic Energy Commission, consists of the naval submarine program and the

naval large ship reactor program. The naval submarine program consists of two distinct efforts, each of which has as its goal an operating nuclear powered submarine. The first will be powered by the Submarine Thermal Reactor (STR), which is being developed by the Westinghouse Electric Corporation and the Argonne National Laboratory. The reactor will operate on thermal neutrons and the heat transfer medium will be water. The second submarine program, the Submarine Intermediate Reactor (SIR) is being developed by the General Electric Company at the Knolls Atomic Power Laboratory. This reac-

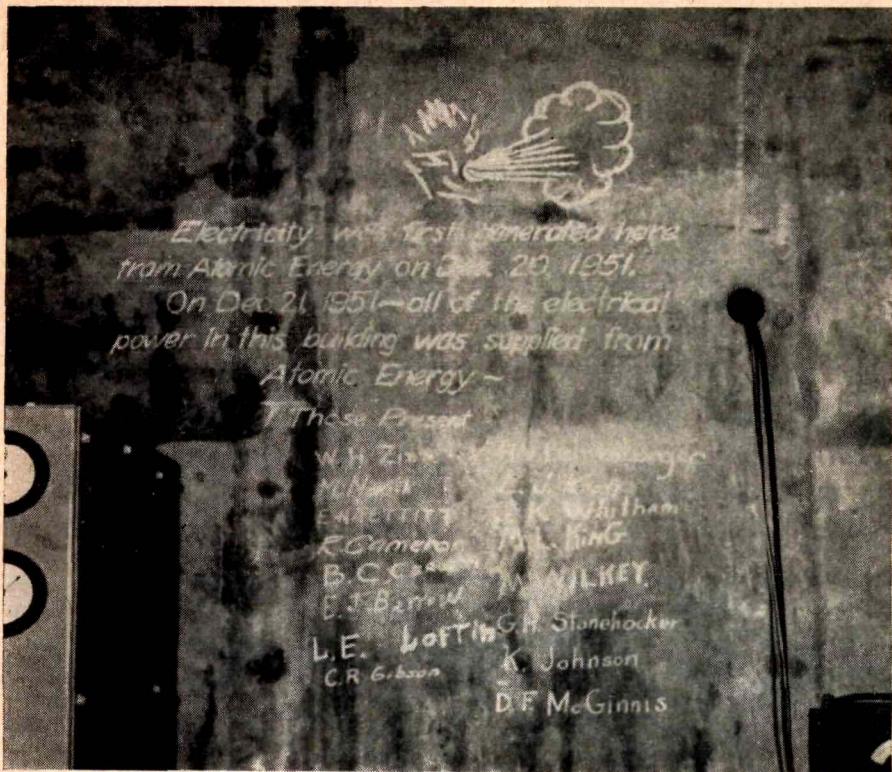
tor will operate on intermediate energy neutrons and will use liquid metal as the heat transfer agent.

The engineering approach to the problem has been the same in each case. A prototype power plant, identical in most respects with the one which will be installed on the submarine, is being built on land in order to iron out the "bugs." Using the experience gained with the land-based models, other plants will be built for the submarines themselves. The STR land-based plant is being constructed at the National Reactor Testing Station near Arco, Idaho. The land-based plant for the SIR is being constructed



IDAHO FALLS OPERATIONS OFFICE

The semi-model of the EBR, a combined fuel-breeder and power plant reactor, is a sort of three-dimensional block-diagram of the power units being developed.



IDAHO FALLS OPERATIONS OFFICE

The first power pile, actually in operation, is at the National Reactor Testing Station in Idaho; the sixteen scientists and engineers who participated in the first known production of useful power from nuclear energy recorded the event on the wall of the power plant room.

at West Milton, New York, about eighteen miles north of Schenectady.

The keel of the USS *Nautilus*, into which the STR will be installed, was laid by President Truman on June 14, 1952. The land-based prototype of this power plant is scheduled to operate at Arco soon. The SIR will also be installed in an operating submarine.

The application of nuclear power to a submarine will greatly improve its

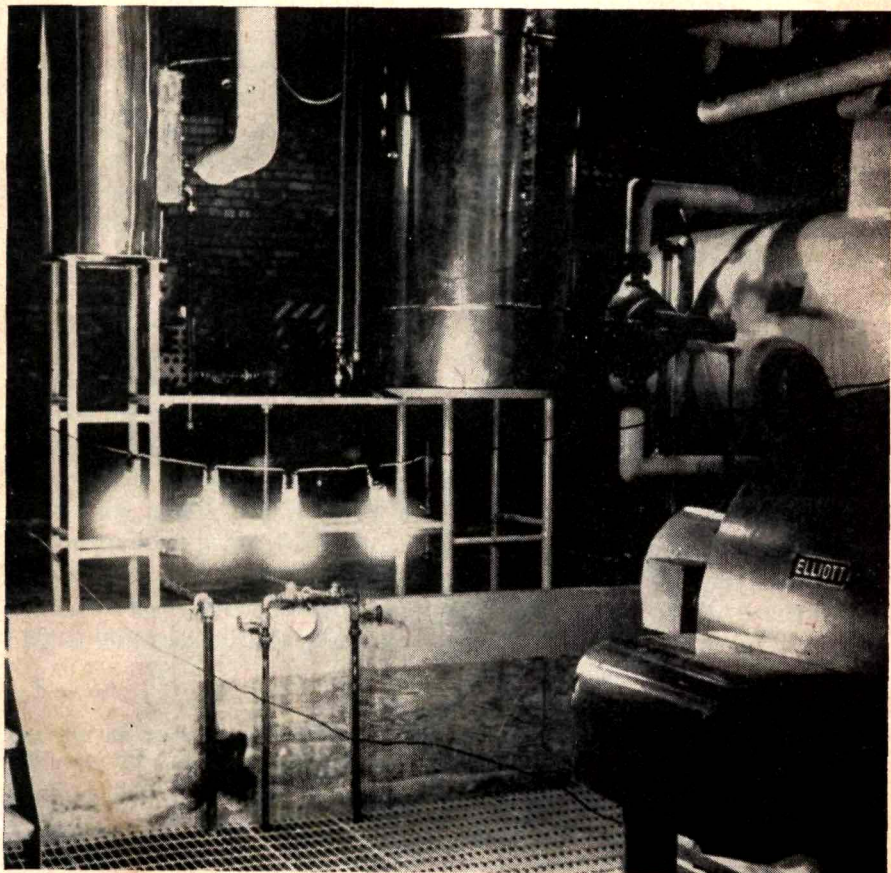
performance characteristics. No longer being dependent on oxygen from the atmosphere, it will be capable of operating submerged for extended periods of time. It will be able to travel at over twenty knots for thousands of miles before refueling is necessary.

The advantages of nuclear power can also be applied to large vessels such as aircraft carriers. For example, the bringing in of large quantities of

air to the boiler and the discharge of hot stack gases presents a complex problem as in the new flush-deck carriers of the FORRESTAL class. A nuclear power plant would eliminate both. Furthermore, the space normally occupied by large quantities of fuel oil could be devoted to making

the ship a more effective weapon. A program leading to the eventual application of nuclear power to such vessels was announced by the Atomic Energy Commission on August 1, 1952.

Perhaps of more interest to landlocked engineers is the Experimental



ARGONNE NATIONAL LABORATORY

The light bulbs are ordinary enough; their source of power is not. This photograph was taken December 20, 1951—the first time electric power was generated from nuclear energy.

Breeder Reactor which has been in operation since August, 1951. This reactor is farther advanced than any of the other power reactors, and has already demonstrated the production of electrical power. Now, inasmuch as some of the details of its construction and production have recently been declassified, I would like to discuss some of the salient points which I feel will be of interest to you. At this point I would like to mention the fact that Dr. W. H. Zinn, Director of the Argonne National Laboratory, has directed the effort on the Experimental Breeder and he has prepared a very fine article on the subject entitled "An Elementary Review of the Basic Problem in Central Station Power Generation with Nuclear Reactors." It gives a far more comprehensive discussion of its details and appears in *Nucleonics* dated September 11, 1952. I recommend this article to you.

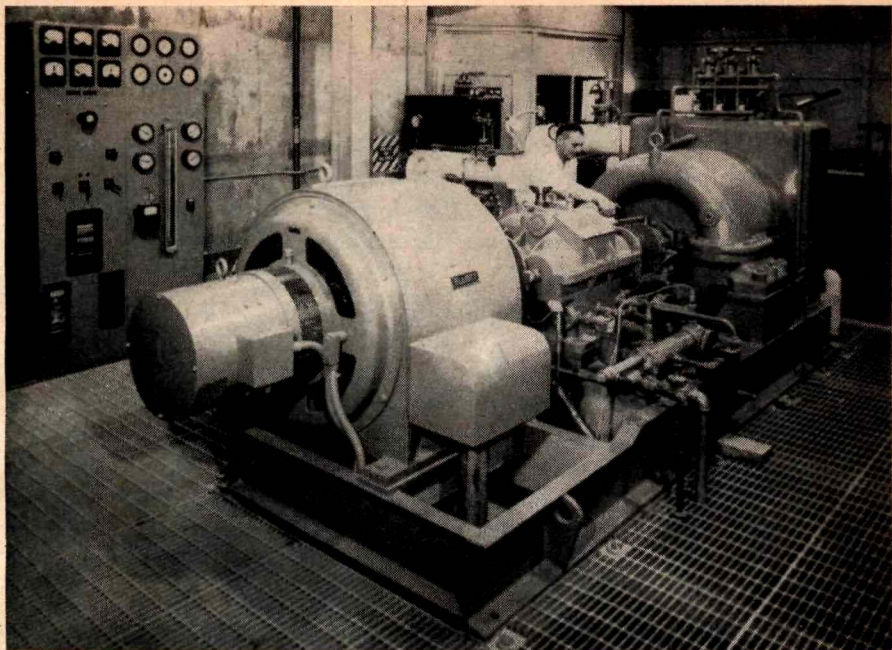
The Experimental Breeding Reactor, called EBR for short, was designed, constructed, and is being operated by the Argonne National Laboratory. Although it generates significant quantities of electricity, it was not built primarily for that purpose. This reactor is an experimental model which was built primarily to demonstrate and study the possibility of breeding. Let me take a minute to explain the term breeding and why this process is so important. Unfortunately, all the atoms of uranium as they occur in

nature are not capable of undergoing the fission process to an appreciable extent. Only the isotope U^{235} does this and this isotope is contained in uranium to the small extent of 1 part in 140. The other isotope, U^{238} , however, can be bombarded with neutrons and transmuted to the element plutonium. Plutonium is a fissionable material and can be used as a fuel. This is the process that takes place in the Hanford production reactors. Recent advances in Reactor Technology indicate that it is actually possible to produce more fuel than is burned and at the same time obtain useful energy. This process of producing more fuel than is burned is known as breeding.

Visualize, if you can, a conventional power plant that not only burns coal to ashes, but also creates fuel in the process. Further, *more of this fuel so created, would be produced*, than the coal burned. This is, in effect, what is possible in a breeding reactor, and the EBR is now being studied to determine how much fuel can be produced in excess of the quantity burned. In addition to this phenomenon, this reactor is generating electrical power.

Operation:

The EBR began operation in August, 1951. On December 20, 1951, the world's first production of significant amounts of electricity from a nuclear reactor heat source was achieved when four bulbs were lighted. The following day, the external electrical supply to



ARGONNE NATIONAL LABORATORY

The EBR is a pilot-plant scale model; it does not, and was not intended to, produce great quantities of power; the 100 kilowatt turbo-generator unit supplies all power requirements of the plant, and produces a useful excess, however.

the building was disconnected and the entire power load was carried by the reactor-boiler-turbine-generator system. This included all electrical lighting, electrical power requirements for all auxiliary equipment such as pumps, fans, et cetera, and the power requirements for the machine shop.

Unclassified Data:

Inasmuch as some interesting information has been but recently declassified, it is now possible to provide some details of the construction and

operation of this reactor. The heat energy is removed from the machine by liquid sodium potassium alloy leaving the system at a temperature of 350°C or 625°F. Super-heated steam of 400 psi pressure is generated. The power load required to operate the reactor is approximately eighty-five kilowatts. The generator is something over one hundred kilowatts size and excess electrical power not required by the reactor is used for building service or dissipated to the atmosphere by electrical heaters. The power den-

sity is two hundred fifty kilowatts per liter and the neutron flux is approximately 10^{14} neutrons per square centimeter per second. The reactor core, that is, the section of the machine containing the fuel, is approximately the size of a regulation football. Electromagnetic pumps and flow meters are used in the liquid metal circuits.

Description of the EBR System:

The fact that the active core of the reactor is as small as a regulation football may tend to make the mechanics and construction of a nuclear machine appear to be very simple. Let us start at the heart of the machine and work outward to get a picture of some of the many other required components. Surrounding this small central core is a breeding blanket which consists of natural uranium. It is in this blanket where the plutonium is produced by absorption of neutrons by the U^{238} atoms. The material in this blanket, like the fuel, is suspended in the sodium potassium coolant in a cylindrical tank. Since the EBR operates on high energy neutrons, no moderating material is contained in the tank to decrease the energy.

Surrounding this tank is a reflector. This is a material that reflects neutrons back into the reactor that would otherwise escape and be lost. Surrounding the core, blanket, and reflector is a shield which consists of a thick section of lead and concrete to absorb the radiation given off in the

fission process.

Also contained in the core and blanket are unique mechanical and nuclear devices for controlling the chain reaction so that a reactor runaway cannot occur and so excessive temperatures are not permitted—that is, temperatures that would cause the fuel and fertile material and the tank to melt.

Sodium-potassium alloy was chosen as the coolant because of its low melting point, high boiling point, high specific heat, non-moderating properties, and because its corrosive nature is modest compared to many other liquid metals. A low melting point is required to prevent freezing of the coolant in the system when the reactor is shut down. A high boiling point is required to eliminate the need of a pressurized system. The high specific heat is required because of the great quantities of heat generated in a small volume that must be removed as rapidly as possible. A material that does not possess moderating properties is essential since this type of reactor operates most efficiently in the very fast neutron range. The heat available from nuclear fuel is limited only by the temperatures that the fuel and structural material can withstand and the rate at which it can be removed from the system.

The principal disadvantage of sodium-potassium alloy is its violent reaction when brought in contact with water or air. It is this property that

calls for extreme care and engineering design in the coolant system.

The coolant flows through the reactor tank by gravity. It is then pumped through a special primary heat exchanger and back up to the storage tank above the reactor by special electromagnetic pumps designed at Argonne.

In flowing through the reactor, the coolant becomes radioactive. This means that the entire primary coolant system must be shielded. A secondary sodium-potassium system removes the heat from this shielded heat exchanger and carries it out to a secondary heat exchanger. The coolant in this system, then, is not radioactive since it does not flow through the reactor. Steam is produced in the secondary heat exchanger and flows through the two hundred fifty kilowatt turbo-generator system to produce electricity.

Power Generation in the EBR:

The power generation phase is incidental but is being carried out to secure experimental information on the handling of liquid metals at high temperatures under radioactive conditions and on the extraction of heat from a reactor in a useful manner. The system was not designed to generate large amounts of electrical power but rather to provide a useful tool for carrying out such experimental studies.

I should like to emphasize that no comparison should be made of the cost of producing electrical power from

this reactor with power from conventional sources. Cost of producing power was not an essential factor in the power phase and the experiment is in no way intended to establish the feasibility of producing electrical power economically from a nuclear source. The technical information gained, however, will be useful in the design of future reactors aimed at generating electricity at a competitive cost.

General Nuclear Power Consideration:

So you see, electrical power can be and has already been generated by atomic means. The problem now is to do it economically and, as a part of the program to study ways of doing this economically, four teams of industrial organizations have been making economics and engineering studies of nuclear power production for the past year. This has been done at their own expense. The organizations participating in this program are *Commonwealth Edison, Public Service of Northern Illinois; Monsanto Chemical, Union Electric; Pacific Gas and Electric, Bechtel; Detroit-Edison, and Dow Chemical*. On the basis of their findings, some of these organizations have already expressed interest in proceeding further with investments of their own funds.

Some of the organizations are showing an interest in a program supported partially by themselves and partially by the Government. Proposals indicating a possible mutual approach would have the AEC finance the con-

struction of the reactor and chemical processing plant, and the industrial firm finance the power plant equipment. In such a case the AEC would furnish the industrial concern with unspent fuel elements and purchase from them the spent fuel elements containing plutonium. The AEC would do the chemical processing.

Feasibility of Nuclear Power:

There are three major factors to bear in mind in considering the feasibility of nuclear power.

1. As I mentioned previously, besides producing heat in a nuclear reactor, other nuclear fuels, such as plutonium can be produced concurrently. Plutonium is a vital material in producing atomic weapons. At the present time it appears that power can be produced from nuclear sources at a competitive cost to power from conventional sources provided a portion of the cost is borne by the sale of plutonium to the Government for military purposes. If military requirements for plutonium are eliminated, the picture at this time would not be as promising. However, there is probably no device so adaptable to both peace and war as a nuclear reactor.

2. The economics at present should not discourage interest. Emphasis has been placed just recently on production of economical power. All new developments are expensive in their early stages. There are many new developments and processes being

studied that may well lead to very satisfactory results.

3. Further, cost is not the only parameter involved, and one should not lose sight of the advantages possessed by a nuclear power plant in remote areas where either coal, oil, or gas is not available and transportation of these conventional fuels is extremely expensive or perhaps even impossible because of their great bulk. Nuclear fuel is extremely compact as can be seen from the figures quoted earlier on the available heat per pound.

Now, while tomorrow will unquestionably bring forth numerous other industrial applications of nuclear energy from the laboratories of the Commission and industry, I feel that the most promising industrial application of nuclear energy will be in the production of useful and competitive power.

In saying this I am not discounting the important application of nuclear power for the propulsion of naval vessels and aircraft, for in this national emergency, the atomic energy project is naturally focused on military application, and neither the world situation nor the character of our establishments indicates that this emphasis will be of short duration.

I say this because I feel it is entirely feasible and possible to design and construct a nuclear plant which will produce power and plutonium simultaneously and at competitive prices.

THE END

EARTH'S GHOSTLY COMPANION IN SPACE

BY R. S. RICHARDSON

One of the most mysterious phenomena of the heavens is widespread, yet seldom seen; covers a large area of the sky, as things astronomical go, and yet is almost invisible!

We hear so much about projects for launching artificial satellites and reports of disks flying across the sky that it is pretty hard to astonish us any more. But perhaps you might be surprised to hear that Earth has a companion out in space that accompanies it faithfully around the Sun year after year like a pale ghost. Very few astronomers have ever seen it. At least I have never known an astronomer who claimed to have seen it and I have never seen it myself. But then that may be because none of us has ever taken the trouble to look for it. For nobody denies its existence and you will find it described in all the textbooks.

The phenomenon I am referring to is that known as the gegenschein.

If you are like myself, you have probably been hearing about the gegenschein most of your life without ever taking it very seriously. You know that gegenschein is German for

“counterglow” and is the name given to a faint patch of light in the sky that always appears directly opposite the Sun. But you have never bothered to look for the gegenschein because you felt that your chances of seeing it were about the same as making a first-class flying saucer observation. One of those things that happens once in a lifetime to a few lucky people.

Well, get ready to disillusion yourself for practically everything you have read about the gegenschein is either wrong or else misleading. The trouble seems to be that the people who write astronomical textbooks have been copying from each other instead of going back to the original material as they should. This is a failing to which such writers are notorious; having authored a text myself I am well qualified to speak on the subject. The other day I happened to run across an old paper on the gegenschein which was a revelation. I found

that the gegenschein is one of the most mysterious and little understood bodies in the solar system, if indeed it *is* in the solar system. Yet its presence in the sky seems beyond question. The thing is undoubtedly there.

Although it is possible that others may have sighted it earlier, credit for discovery of the gegenschein must go to a German astronomer, Theodore J. C. A. Brorson, who gave the first clear description of the object. After studying it for two years he published a brief note about it in November, 1855, which apparently nobody ever bothered to read. The gegenschein remained unknown for twenty years when it was discovered again by T. W. Backhouse, an Englishman. Backhouse told the Royal Astronomical Society that he had "lately observed a curious phenomenon respecting the Zodiacal Light which I have never heard described before; that is, a comparatively bright patch opposite the Sun."

His remarks aroused so little interest that when E. E. Barnard sighted the faint glow eight years later he had no idea what it was. At that time Barnard was only twenty-six, a struggling young photographer in Nashville with no technical knowledge of astronomy but with a natural talent for precise observation. One night in October while hunting for comets he noticed a strange spot of light in the sky near the constellation of Pegasus. He thought it might be a dim cloud

at first but it was still there on the following night and the next and the next. It did not take many days, however, to reveal that the object was not fixed but was moving against the background of stars at the rate of about a degree a day or twice the diameter of the full moon. This indicated that it could not be in the atmosphere but must be somewhere in outer space.

Barnard made a careful series of observations on the position of the object which he sent to a noted astronomer asking for advice. The astronomer replied that he had rediscovered the gegenschein. This was the beginning of a regular program of observations on the gegenschein which Barnard continued for the next fifteen years. Here are the principal facts that he found out about it.

(I thoroughly realize that in a magazine of this kind the readers expect to get the latest word on the newest discoveries in science. But I contend that the gegenschein *is* new. It is new in the sense that it has been forgotten by the present generation of astronomers, professional and amateur alike.)

First of all, we should rid ourselves of the idea that the gegenschein is so difficult to see. Actually it is such an easy object that Barnard said he used to wonder how so many people could possibly have missed it. The trouble seems to be that they looked for it too hard. The best way to see it is not by

straining your eyes searching for it directly but by trying to pick it up by averted vision. You start by looking a considerable distance away from the place where the gegenschein should be and then approaching it gradually so that the dim glow falls on the most sensitive portion of the retina. The gegenschein then comes into view with surprising distinctness as a hazy patch of light. When most conspicuous it is round or oval in shape and about the same length as the Little Dipper. It is brightest in the center and its appearance suggests luminous atmospheric haze rather than some celestial nebula.

Barnard remarked that he had never pointed out the gegenschein to anyone who was unable to see it readily enough even though they had searched for it in vain before. He even got Professor Simon Newcomb to see it. Newcomb was renowned as one of the hardest boiled astronomers of the nineteenth century and you can bet that he would never have admitted seeing it unless it was perfectly plain to him.

You may object that it is easy enough for an astronomer to see the gegenschein in the clear air of a high mountain observatory but what chance does a fellow have down at sea level?

But here is the most amazing part of Barnard's account. For he maintained that there are hardly any atmospheric conditions that militate

against the visibility of the gegenschein except a bright moon and artificial illumination. Indeed, he found on the contrary that "throughout my observations I have been struck with the fact that a sky not overly transparent is just as good—I won't say better—for observing the gegenschein as the clearest darkest night."

This sounds so utterly and completely incredible that we would never believe it for an instant were it not the carefully considered opinion of an expert observer of long experience. (Remember that Barnard discovered visually the faint little fifth satellite of Jupiter). Still more fantastic is his statement that somehow the gegenschein always gave him the impression of being an atmospheric effect. He was never able to rid himself of the feeling that it was comparatively close at hand.

Fortunately the question of distance is easily settled. If it is a phenomenon of the upper atmosphere only a few hundred or a thousand miles distant, it should show an enormous parallax. That is, its position among the stars should appear quite different when viewed simultaneously by observers at widely separated stations. But observations made for parallax in 1893 by observers in the northern and southern hemispheres failed to reveal any parallax. Despite the hazy appearance of the object we should be able to detect its parallax if it is at half the distance of the

moon. Hence, we can assert with confidence that the gegenschein must be outside Earth's atmosphere at a distance greater than one hundred thousand miles.

Since the gegenschein appears always at the point in the night sky directly opposite the Sun, then its position must be centered upon the apparent path of the Sun among the stars called the ecliptic. The glow is most conspicuous in the spring and fall and disappears in June and December when the ecliptic is crossing the Milky Way. This means that in the middle of March the gegenschein is near the autumnal equinox and will be found on a line joining the bright stars Regulus and Spica. In the fall it will be near the vernal equinox in the vicinity of the constellations of Pisces and Aquarius. There are no bright stars in this part of the sky but the region is easily identified as being about 20° south of the great square of Pegasus.

Several theories have been advanced to explain the gegenschein. The one that has come to be accepted almost as if it were an established fact was that put forth independently by Gylden and Moulton. As Moulton's is much the easier to grasp, it is the one that will be given here.

Moulton is a mathematical astronomer whose interest in the subject was aroused when he paid a visit to the Yerkes Observatory in 1899. Here

he met Barnard who showed him the gegenschein for the first time. Moulton was so stirred by the sight that he got busy immediately on a theory of the gegenschein which occupied him for the next two months. The idea upon which it is based is roughly like this:

Suppose the only bodies in the Universe are the Sun and Earth. Suppose also that the position and velocity of the Earth relative to the Sun are known at a particular time. Then the position of the Earth can be determined for any time in the past or future. In other words, the problem of two bodies is completely solved.

But, if we should introduce a third planet into the system, the situation would be changed at once. The motions of the bodies now become so complicated that a general solution in a practical form for numerical calculation has never been found.

If, however, the third body is very tiny such as an asteroid or meteorite, then the problem can be solved in a few very special cases. The case that applies to the gegenschein is one of the "straight line" solutions. Imagine a meteorite about a million miles* out in space beyond Earth in a straight line with the Earth and Sun. Now, if the meteorite could be started moving with just the right velocity, it would continue to move so that it was always in a straight line with the Earth and Sun. As viewed from Earth the meteorite would be seen always di-

* 900,000 miles to be exact.

rectly opposite the Sun.

Actually the meteorite would soon stray from the opposition point for the motion is highly unstable. The least disturbing force will upset the balance. Even if you could go out there in a spaceship and launch the meteorite at exactly the right velocity, it would soon get out of step owing to the disturbing action of the other planets upon it.

But while conditions can never be fulfilled precisely they can nevertheless be fulfilled for a limited time approximately. Undoubtedly the space around the Sun is swarming with meteorites. Many of these must eventually pass near the point a million miles beyond the Earth opposite the Sun. Moreover, some of them will be moving with nearly the right velocity. As a result, these will be temporarily trapped in this region somewhat like people whose cars have gotten stuck in a mudhole. After a while they will be freed by the help of other forces acting upon them—when somebody comes to pull them out. In the meantime they struggle desperately without being able to move more than a few feet in any direction. Similarly, meteorites a million miles away at the opposition point may remain near there before their orbits are altered sufficiently to allow them to escape. Thus there are dynamical reasons for believing that a great swarm of meteorites accompanies the Earth around

the Sun about a million miles away. These particles will be relatively bright since they will always be seen at full phase like the full moon.

Needless to say the problem presents great mathematical difficulties. Moulton emphasized that while it is possible to show that meteorites will tend to collect around the opposition point, it is impossible to prove that they would collect in sufficient numbers to render them visible. The problem can be solved qualitatively but not quantitatively.

Barnard believed that it should be possible to photograph the gegenschein with a fast camera of wide angular aperture. He reproduced a plate taken in 1899 which shows some sort of a dim blemish which might be the gegenschein. The present Schmidt telescopes should be ideally suited to this job. We would look for a faint darkening on the negative overlying the black dots due to the stars. Even so the effect would certainly not be easy to detect and only perceptible on large plates covering several hundred square degrees of sky.

Nothing much seems to have been done with the gegenschein since Barnard published his results half a century ago. Apparently it will have to be discovered all over again for the fourth time. But in the future let us beware. It would go hard indeed with any spaceship that chanced to crash into this churning mass of matter.

THE END



**THESE
SHALL NOT
BE LOST**

BY E. B. COLE

*No one man — no one race —
no one culture — can think up all
the ideas that might be possible.
So, for the Philosophical Corps, no
culture should be wholly lost . . .*

Exploratory Cruiser *Calimunda*, No.
4735

107-463-578

From: Commanding Officer

To: Office of the Chief Explorer

Subject: Preliminary Report, Planet
No. 5, Sun G3-4/572 GSC

1. The subject planet is one of four-
teen in a system with a rather large G3
sun. Reports will be submitted at a
later date on two other inhabited plan-
ets in this system.

2. Enclosures include Chemical, Geo-
physical, Biological and Ethnic re-
ports in accordance with SGR 45-938.

A brief summary follows:

a. *Chemical*: Subject planet has an oxygen-nitrogen envelope, with traces of other gases. Water vapor varies in its partial pressure over a medium range, with local exceptions. Presence in varying quantity of all natural elements was noted in the planetary crust and in the seas. No trace was found of artificial elements, their resultants or products.

b. *Geophysical*: Two major land masses were noted. These form large polar caps, extending well toward the equator, but are so broken up by seas as to form several subdivisions. Some islands exist in the equatorial seas, but none of these can be considered as important land masses. The planet has both rotation and revolution, with a slight axial perturbation. No satellite exists. The seas are tideless. The land temperatures range from approximately 230° to 395° absolute. Atmospheric pressure is 0.9 bars, mean, at sea level and gravitation is 960. Atmospheric turbulence is moderate. Precipitation is light over most of the planet. Some comparatively large areas ashore appear to have virtually none.

c. *Biological*: All life forms noted were on the carbon-hydrogen-oxygen cycle.

Vegetable life was found to be reasonably prolific, stationary in type, and relatively uncomplicated in structure, though taking numerous forms. Life cycles were variable, being virtu-

ally ephemeral in some cases and of medium duration in some of the larger vegetation observed.

Animal life proved to be varied, running from simple to complex in structure. Both warm and cold-blooded forms were observed in virtually all areas investigated, existing both at sea and shore. All animal life cycles, including that of the dominant species, were of short or extremely short duration.

d. *Ethnic*: The dominant form of life is humanoid, type 6.4151. Skin pigmentation is variable. Some intermixing of pigmentation groups was noted, but in the main, each group has its own area.

Civilization groups were observed in four areas. Civilization level was quite primitive, being on the imperial threshold. Centers of civilization were in the planetary semitropical bands in both hemispheres, with territorial extensions well into the temperate areas.

In general, the civilizations observed are in the first stages of development. No mechanical means are used for power sources. Slave or animal labor is used in all phases of activity. Media of exchange are in existence, but no coordinated system of banking was discovered. Among the ruling classes, knowledge of mechanics or computational mathematics is unfashionable. Chief avocations appear to be literature, music, martial exercises and a sort of philosophy unsupported by research.

3. Recommendations:

It is believed that this planet is presently in a stasis, or approaching a stasis which may prevent further progress for several periods, and even cause lost ground unless assistance is given. Recommendation is therefore made that this planet be referred to the Philosophical Corps for further action.

Hel Guran
Comdr., ExpC
Commanding

3 Enclosures:

1. Chemical Survey, Form EC-107
2. Geophysical Survey, Form EC-232
3. Ethnic Survey, Form EC-296

Informal Report

From: OIC, Team 6

To: Commanding Officer, 7342 Philosophical Group

Subject: Initial check, Planet 5, Sun G3-4/572 GSC

1. Team six has set up a base on an island at co-ordinates 220.4070-302.0050. Pursuant to orders, observers have been sent to the four civilizations noted. Transcripts of observer reports are enclosed herewith.

2. As can be seen from the observer reports, the civilization centered at 523.4060-220.0060 is the probable dominant. Of the rest, one is so completely in stasis as to require long attention; the other two are so thoroughly lacking in desirable factors and so tainted with inherent weakness as to be inconsiderable.

The dominant is presently subject to powerful stresses, both external and internal. Complete collapse is probable within a period or less, and it is believed that this collapse would be impractical to forestall, due to the large number of unassimilated savage and semisavage tribes in close proximity to the Imperial borders, as well as to the serious internal faults. In any event, desirability of complete preservation is open to question. Among the internal stresses will be noted a strong trend toward insensate cruelty, sufficient to destroy most cultures. A long history of corruption in government and trade is also noted. On the other hand, governmental and legal structure are excellent, cultural level is good, and the arts and sciences are satisfactorily advanced. These should not be lost.

3. It is recommended that operators be sent in with a view to isolation and retention of worthwhile institutions and knowledge during the period of extreme uncertainty which will follow the collapse of the Empire. Provision should be made for possible deposit of further knowledge useful to the planet's future.

Jon Dall
Capt. PhC

4 Enclosures

OIC, Team 6

Observer Reports

7342 Philosophical Group
Office of the Commanding Officer

579.0352

From: Commanding Officer, 7342 Philosophical Group
To: OIC, Team 6
Subject: Operation No. 705

1. Informal report received and noted. The reports have been reviewed and forwarded. Recommendation is hereby approved and operation is designated as number seven hundred five.

2. Operation will be organized to conform with SGR 10-351 and Handbook PH-205. Control observers without recall will be sent in advance. These will act as foci in case modification of standard procedure is necessary, and may be used as operation assistants. Discretion is granted.

Coatl Myxlr
Col. PhC
Commanding

Gradually, the reddish tinge of the setting sun faded. A chill came into the air as the stars appeared and cast their feeble light over the village. A guard closed the gate, then returned to his game in the guardroom.

In town, a man walked by the houses, Unobtrusively, he opened a door and entered. Soon, another came to the same door. Another came, then others.

Inside, Master Operations Technician Marc D'lun glanced around at the group.

"Well, gentlemen," he greeted them, "I see you have all arrived. Are your integrations complete?"

One of the men nodded.

"Yes, they are," he announced. "I am now the tentmaker, Kono Meru. The records indicate that I am thirty years old. I was born in a nomad camp out in the hills, and am now an orphan." He pointed at another man. "Xler, there, is an itinerant wood-cutter, named Kloru Mino. He's twenty-six. Both parents were pretty old. They died a couple of years ago. The rest of the section are nomads, herders, artisans, and so on. Records are all straight. We all have a number of acquaintances, but no close friends or relatives."

"Very good, sergeant. The team's been setting us up in the meantime. Our operations center is in a cliff out in the hills." D'lun looked around the group of men. "Of course, you all know of Marko Dalu, the healer. Otherwise you wouldn't have found me. Records did an excellent job for all of us, but that's normal. Now, let's get to business.

"In the first place, the observers have given us a lot on this civilization. Zlet, you're Intelligence. Suppose you give us a run down."

Zlet, now renamed Kara Fero, nodded.

"The Empire has been in existence now for about fourteen centuries. It started with a rather small province, Daltur, which had a definitely democratic government and a definitely independent population. All inhabitants

voted for every leader in their government. There was no such thing as an appointive or a hereditary job. In every decision of policy, majority ruled. They were surrounded by petty kingdoms, tyrannies, and the usual conglomeration of city states. The small seaport of Baratea became their capital, and as time went on, their trade excited the envy and very often the anger of their neighbors. Periodically, the Dalturans found themselves embroiled in wars, and they developed a system of military service. Many of their citizens devoted themselves to the study of tactics and military science, and it wasn't long before they started annexing other areas and cities. Pretty soon, they were too bulky for their old democracy. For a while, they fumbled around in their efforts to find a workable government, and it looked as though the Dalturan Empire was going to fall apart from sheer unwieldiness." Fero paused, glancing about. Someone held out a cup of wine. Fero nodded his thanks, and took a sip.

"Some of their leaders, however, were pretty sharp on civic theory," he continued. "They worked out a rather good system and put it into effect. Actually, it's a simple idea, but it has resulted in an imposing governmental structure. The basic idea was that of a governing panel of selected persons, the 'Eligible Ones,' from whom leaders were chosen. By means of competitive examinations and contests, they selected the best of their

youth. These were placed in training as potential leaders, and when deemed ready, were proposed for official posts. Only members of this panel were eligible for such posts. When not in office, or when training, they lived in simple surroundings, supported by the state. Popular vote placed them in office, and a system of electors was worked out to simplify the gathering of that vote.

"Nominally, this system is still in effect," added Fero. "The only trouble is that it's showing signs of weathering. Here and there, along the line, certain electors took matters into their own hands. Some of the Eligibles played along, for value received, of course. Appointive officials started appearing. A priesthood sprang up among the 'Eligible Ones.' Next thing, sons of the 'Eligible Ones' started taking their places among the governing group without benefit of the traditional selection. A few centuries ago, a hereditary dynasty was set up, supported by the priesthood, and the inevitable happened. The Emperor became divine."

Fero reached for the wine cup, took another sip, then continued.

"As it stands now," he concluded, "we have a sick Empire. The divine ruler is totally unfit to make the decisions required of him. A group of advisors have taken over the reins of government, and are running things strictly for their own profit and that of their friends. The average citizen

has no more choice in government or even in his own fate than his cattle. Of course, he can still vote, but the results of the ballot invariably swing into line with the wishes of the ruling group. Our common citizen is becoming aware of the situation and dissatisfaction is spreading throughout the Empire. The governors and priests know it, but they are incapable of quelling the feeling. They can't return to the old uncomplicated days of the democracy and still hold their positions, so they depend more and more upon force and terrorism for their authority. Meanwhile, the outer fringes of the Empire are under pressure from a number of unassimilated tribes, who have no desire to deal with Daltur in any way. The Empire will probably stagger along under its own inertia for a few more centuries, but the final collapse is already on the tape."

Marko Dalu nodded as Fero sat down. "That's the general picture," he commented. "Not particularly original, of course, but it's not pretty, and it's up to us to take action. Naturally, you have all studied the handbooks and a number of case histories, so I don't think I'll have to go into basic details." Dalu looked around the group. "We have about a hundred thousand people in this area," he added, "and about two sun cycles to work on them. We might get three. Sergeant Miller, suppose you go into individual assignments. I'll listen."

As Miller talked, Dalu sat listening and checking off points. Finally, he leaned back, satisfied. Yes, they should be able to collect at least a hundred and fifty useful recruits from this population. Properly guided, their influence should make quite an impact upon the millions within and without the Empire. Yes, he decided, between a hundred and fifty and two hundred should be a great sufficiency for the initial phases. Now, the only question would be to gather the right people, instruct them properly, equip them and put them to work.

"Of course," Sergeant Miller was saying, "these agents will have to have some sort of publicly known basic philosophy. Their mission depends to a great extent upon popular reaction and recognition. We can't simply tell them, 'Go out and reform the Empire,' and turn them loose." He paused, turning slightly. "That is Sergeant D'lun's department."

Marko Dalu smiled to himself. Yes, there would have to be considerable publicity, some of it pretty dramatic. Actions would have to be taken and words spoken whose echoes would ring through history for centuries to come. He remembered some of the melodrama that had been played out for similar purposes. "Hope we can play this one straight," he muttered to himself.

Miller finished his talk and sat down. Marko Dalu looked up. "Any questions?" he asked.

No one spoke.

"There's one other thing," added Dalu, "the legal system of the Empire. Fundamentally, it's good. Simple, to be sure, but good. The underlying theory is equity, which is correct. Laws are quite easy to understand, reasonably definite, yet they admit of equitable decisions. The system of elected judges, public hearings and scant ceremony is worth saving. We can't say so much for the ecclesiastical courts. They are overburdened with ceremony. Bribery is altogether too easy and too common, and the closed hearings and drastic punishments are definitely undesirable. The same equity should be used in criminal cases as is at least nominally shown in civil affairs." He looked around again. "If there are no questions, I think we can call this meeting over. You can go ahead and start evaluating your acquaintances and making more. Shoot them into me as fast as you are sure of their potentialities. I'll screen 'em and pass them on to Base."

One by one, the men took their leave, and melted away into the shadowy streets.

Slowly, the galley picked its way through the crowded harbor, edging through the narrow channel to the Baratea dockside. Already, the merchants were on deck, watching the sweating slaves hoist bales of goods from the hold. An overseer called time; an unimaginative man, he called with

a monotonous, annoying chant. Below, the slow drumbeat of the oar-master competed with him for rhythm.

Philar, master of the ship's guard, leaned against the low rail, aloof from the activity. He was bored. He was also mildly irritated. Why, he wasn't sure. He was just bored and irritated. Nothing had happened this voyage to cause annoyance. In fact, nothing had happened this voyage. The normal, dull routine of life had droned on day by day, just as it had during most of a long career. There had been no attempts at uprising by the galley slaves; no pirate attacks; no adventures with marine monsters; nothing. Philar yawned. Looking across the harbor, he could see his favorite wine shop. There, stories would be circulating of sea monsters; of mutinies successfully coped with; of pirate attacks skillfully repelled by bravery at arms. Old comrades would be coming in, their purses heavy with rewards, their armor renewed; some, perhaps, with new insignia of rank. He, Philar dar Burta, senior guardmaster, would merely sit. He would listen to the talk, and when questioned, all he could say would be:

"We went to Bynara. The merchants haggled. Some got richer; some got poorer. We came back. Have some wine."

Everyone in the room would shake their heads. Someone would say, "Good old Philar. Nothing ever happens. Nothing ever goes wrong. Now, the

last time I went to Bynara—”

At a sharp command from the oar-master, the port oars were shipped. Slowly, the galley swung into the dock, to be secured by the shouting dockhands. A gangway was being rigged aft. Philar shifted his attention to the dockers. Good man, that dock-master. His handling of men and materials spoke plainly of long years of experience.

Oh, well, thought the guardmaster. He had long experience, too. It was honorable service he had behind him, though uneventful. For forty-five years, he had perfected himself and others in the arts and in the ancient sciences of war and defense. From one assignment to another, he had gone his uneventful way, covering every corner of the sprawled Empire. Always, however, he had arrived at a new assignment just after the excitement was over, or he had received orders and left just before the trouble started. He shook his head. Funny, how battle had passed him by. Many of his comrades and pupils in the training fields and guardrooms had gone on to promotion and rewards. Others had simply gone. Here, though, was good, solid, old Philar; a dependable guardmaster, but somehow one who never wet his sword or did anything very remarkable. Even in his youth, during the war with Maelos, he had been assigned to the reserve which, due to the proficiency of the commanders, had never been called up.

As he gazed at the practiced movements of the stevedores, they faded from view, to be replaced by other images. Again, he was an awkward new recruit. Daltur was at war. They were on the training field. The old field-master who had instructed was long since gone, but Philar could still hear his voice; cautioning, criticizing, advising.

“You, there, Philar,” he had cried. “Hold up that point. Hold it up, I say! This is no corn you’re mowing now. That’s a man before you. Were Holan there of Maelos, he’d be drinking your blood by now. Here, let me show you.” Indignantly, the elder had snatched Holan’s sword, turning quickly. A swift pass ensued. Philar’s blade was brushed aside and a heavy blow on his helmet made him stagger.

“See, now,” the instructor had growled, throwing the sword back to its owner, “that was the flat. The edge would’ve made you dog meat.” He turned away. “Go to it again.”

The shouting from the dock filtered through the guardsman’s reverie, scattering the picture. He shook his head.

“Guess I’m getting old,” he muttered. “Better retire to a farm before I get feeble-minded.”

Truthfully, he didn’t feel any older than he had when he came into the service. Men said, however, that one can only live so long. He knew he was approaching that age. Most of his allotted time had gone. Shrugging, he

gazed over the crowded wharf. A courier was approaching.

The man drew his car to the gangway, tossed the reins to a dockhand, and came striding up to the deck. As he approached, he performed a quick salute.

"You are the guardmaster, Philar dar Burta?"

Philar nodded. "I am," he announced. "What have you?"

The courier extended a sealed tablet. "Orders, sir. I await your pleasure."

The old guardsman's eyebrows contracted as he took the package. "What have we here?" he muttered. Turning, he broke the seal with a few quick taps against the rail, and scanned the characters impressed on the tablets within.

The first was the standard company master's commission.

"By the grace of Halfazor, Emperor of Daltur, First Prince of the Seas, Defender of Truth and Divine Lord of all Things living, know all men that, placing great faith in the loyalty, ability and wisdom of Philar dar Burta, I present him as Kalidar of Guardsmen. All men and all other Things living beneath the heavens as ordained by the Divine Halfazor will then render him such aid as is necessary to complete his ordered course. All men under his command, or of inferior rank will unquestioningly obey his orders henceforth—"

It was signed by the Master of the Palace Guard, Milbar.

Philar looked over the tablet again. Yes, he had read correctly the first time. After forty-five years, promotion had come. Now, Philar was one of those who grandly crooked a finger for a car to pick him up. No longer did he have to walk the streets to his barrack. Rather, he would ride to his lodging. No more would he sit in the wine shop of an evening, listening to the boasts of those younger than himself. Rather, he would drink with a few of his own chosen friends in his own room. He shook his head, then looked at the other tablet. Here was an assignment.

"By the grace . . . Proceed to Kleedra . . . Deal with rebellious elements . . . Bring offenders to swift justice—"

It was also signed by old Milbar.

Philar dropped the two tablets into his pouch, then leaned against the rail again. He looked toward the courier. His courier, now. By Halfazor! Rebellion in the Empire! Of course, merely a minor affair, but rebellion none the less. Most peculiar. Why, the Kleedrans had been a minor tribe in a little backwater corner of the Empire for years, even lifetimes. He could remember back thirty or more years, when he was on duty in the sleepy little walled village—fifty men, under a senior guardmaster. Even at that, it had been a soft assignment. He shook his head again, then turned sharply.

"Mylan. Mylan, come here, I



say," he shouted.

His senior watchmaster came out of a hatch, blinked, then stood before him.

Philar put his hand on the man's shoulder. "Take over, friend," he said. "I'm giving you the ship."

Mylan frowned. "What happened?"

His senior grinned. "I just got promoted and reassigned," he announced.

Mylan's smile was slightly forced. "Congratulations," he said. Then, formally, "I hope I may serve under you later, sir." He gave a salute.

Philar nodded, returning the salute. "Possibly we may serve together," he gave the formal reply. He turned, and went down the gangway.

Mylan watched him as he climbed into the car. The courier snapped his

reins and they were off. The new guard-master leaned against the rail, frowning.

Why, he wondered, should they promote that soft, easy-going old fool when real men were around for the asking. He glanced down at his own trim armor, with its fine inlaid design. How much, he wondered, had he spent in bribes to the aides? How many times had he sent the Kalidar choice bottles? And then they promoted an idiot who wouldn't unsheath his sword. Why, the poor old poltroon wouldn't even strike an erring guard. Had to talk softly to them.

He spat over the side, then turned, fingering his sword hilt. Well, anyway, things on this ship would be far different now, with a man in charge. He raised his voice.

"Turn out the guard," he shouted. "Get moving there. We haven't all day to clear this ship." Unsheathing his sword, he smacked with the flat at the legs of the guards as they passed. "Come on, come on," he urged. "On the double, there."

Plono Baltur shook his head as he looked at his tent. There was no question about it, long and hard use was showing. The tent had patches upon its patches. Yes, this man was right. He must do something about it, but there was the cost. He turned again. Kono Meru stood watching him.

"I am not a rich man," began Baltur. "My needs are simple."

Meru waved a hand airily. "No matter," he declared, "my tents are good. They last for years, yet the cost is low." Turning to one of his animals, he started unpacking a bale. "You will see," he said, "how strong material can be, and yet how light in weight." He spread the contents of the bale on the ground, whipping the expanse of cloth open with practiced gestures, and talking as he worked.

Without realizing just how it happened, Baltur found himself bargaining over the tent first, than talking of his personal affairs. Soon, they were talking of the affairs of the province, then of Imperial policy. With a start, Baltur realized that he had bared some of his innermost thoughts. Dangerous thoughts, some of them, and these to a man he had just met. He swallowed hard, then looked straight at the tentmaker. What if this man were an Imperial spy?

His companion smiled gently. "No, Plono Baltur, I am far from being an agent of the Emperor." He nodded toward the herdsman's tent. "Shall we go inside?"

Baltur shrugged, held the tent flap aside, then entered after his visitor.

Inside, Kono Meru swept his elaborate headdress off, revealing a crop of black hair, surmounted by a golden circlet.

"First," he said, "let me introduce myself. I am known on this world as the tentmaker, Kono Meru. On other worlds, I have had different names."

He held up a hand. "No, make no mistake about me. I am a man like yourself. Neither I nor any of my companions are supernatural. We merely come from worlds other than this one. Older worlds. We have certain tools unknown to your world, like this 'mentacom' here." He pointed to the circlet. "The device has a long, technical name, but we usually just call it a mentacom. It allows us to make direct contact with the mind of another being, making words unnecessary." Kono paused.

"We also have knowledge unheard of by your world as yet," he continued. "Possession of that knowledge has brought with it obligations and duties. My duty and that of my companions is to make worlds we are assigned to into better places for their inhabitants to live in, that the universe of worlds may prosper."

"There are, then, other worlds than this?" Baltur stared at him.

"Worlds beyond number," Meru assured him. "Many of them inhabited by men such as you and I."

"Why do you tell me these things?" queried the herder. "I am but a simple man. It is not for me to make great decisions." He spread his hands. "Rather, should you go to those who rule."

Kono Meru smiled. He had been right. The man had both mental flexibility and analytical ability. "It is our opinion," he stated, "that those who now rule this Empire are failing to do

a good job. You have agreed with us on that."

Baltur started. "I . . . I merely—"

His companion held up a hand, then pointed to the golden circlet. "You had the thought," he said positively. "Also," he added, "you said that men are not to be treated as cattle, thinking as you said it that in many ways, you and your people are being so treated."

Baltur paled. "I admit it," he muttered. "I had the thought."

Meru smiled. "How, then, can I go to rulers who consider men as cattle, and ask them to give those cattle a voice in the government?"

"I see." Baltur walked across the tent, seated himself, and leaned back against some cushions. "What, then, can I do? I am a herdsman. I have no great wealth, no power."

"Do you want to do something?"

"Yes, yes, I think so."

"You are willing to accept hardship and danger?"

Baltur shrugged. "If it will do good."

"Good. You will go, then, to the healer, Marko Dalu. Until you see him, you will forget all that we have spoken about." As he spoke, the tentmaker removed a small instrument from his clothing, pointing it toward the herdsman. "When you see Marko Dalu, you will remember your talk with me, and will ask him for further information and instruction." Kono Meru stood, walking to the tent entrance.

"Now, I will help you set up your new tent, then we will part company."

The following morning, Baltur woke, feeling weak and nauseated. He stirred about the new tent, preparing his breakfast, then looked at the result with distaste. Finally, he tried some. It tasted terrible. He spat it out. Now, he realized that he had a headache. He thought back to the night before. No, he hadn't touched any wine.

"Something else is wrong," he muttered. "What was the name of that healer?"

He went outside, looking over his herd, then started making preparations for the trip into the village.

Nodan, aide to the Master of the Palace Guard, was a puzzled man. He looked after the retreating figure of Company Master Philar, his brows contracted in thought. Finally, he spoke to his superior.

"Why, sir? Why promote that man and send him on this assignment? Surely, there are others better fitted for command."

Milbar smiled thoughtfully. "For instance?" he inquired.

The smile made Nodan bold. "For instance, the senior watchmaster, Mylan dar Byklor, sir," he said. "Surely, there's a man who could take over a mission and make it successful."

Milbar's smile grew broader. "Ah, yes, Mylan. Makes up a nice bribe, doesn't he?"

Nodan flushed. His mouth opened,

but his superior held up a hand.

"No, no. Don't worry. Of course I'm not blind, but I know that one must live. Why not a little on the side now and then." The older man dropped his hand, then played with his fingers for a moment.

"No," he continued, "this promotion and assignment is not exactly a reward. You see, the situation in Kleedra is most peculiar." He shook his head. "Most peculiar," he repeated. Really, it isn't a genuine rebellion. No arms have shown. None have flouted authority. It seems rather a change in attitude. Many of the townspeople and more of the countryfolk seem to regard the Empire with a sort of tolerance, rather than with the normal respect. It is nothing we can put our fingers on. We can't declare a state of emergency, since there is none.

"It seems, however, that there is a man. A physician named Marko—Marko Dalu. He appears to be the central figure. People come to him from quite considerable distances, not so much for medical care as for something else. He goes out quite a bit, too. We've noticed that whenever he does, he gathers quite a crowd. Always makes speeches. Not much to them, but they seem to result in a very unsatisfactory attitude toward the Empire."

"But," Nodan suggested, "can't he be put in constraint on a treason or a heresy charge?"

"Oh, easily." His superior nodded.

"Of course he can. We can arrest anyone for that, and in this case, we could make it stick." He paused, a smile creeping over his face. "But we want to do it in such a way as to be profitable." He paused again. "We must sacrifice troops to an unlawful mob." He beat softly on the table. "Our overlordship will be challenged." His voice lowered again, and he faced Nodan squarely. "Then, of course, Kleedra will be reconquered. It will resume its rightful place as a subject village, and all will be well again."

Nodan's smile was admiring. "A truly clever plan," he applauded. "And, of course, our Philar, the bluff old warrior, is just the man to make the plan work?"

"Naturally," nodded Milbar, "he will swagger in at the head of his reinforced company, full of righteousness and patriotic vim. He'll seize his prisoner and start out of town. Then, the trap will spring. He has never been in combat on the battlefield, nor have the men we are giving him. A determined mob will make dog meat of them; with some encouragement, of course, and at a price. After that, I'll send in experienced troops and take over the district."

Milbar leaned back in his chair, contemplating the future with considerable satisfaction.

It was a warm day. Back in the hills, a faint blue haze obscured details of trees and ground. On one of the hill-

sides, before a cliff, a large group of people had gathered. They faced a single man expectantly. He held up his hands for silence.

"Peace, my friends," he said. He spoke in almost a normal tone, yet those most distant heard him clearly.

Back in the crowd, among a small group of his friends, Plono Baltur nodded to himself. Yes, the mental communicator was a remarkable device. In this age, a public address system would be supernatural. It would be a strange device to be regarded with superstitious fear, yet the far more advanced mentacom merely gave a feeling of ease. It operated unobtrusively, without causing any comment, or revealing itself in any way. He looked about the group. Yes, a lot of people were listening.

"Men have spoken words of violence," Marko was continuing. "This cannot be. Those who resort to violence will perish uselessly. It is only for those who abstain, who pass their days in peace who, with their sons, will inherit the future."

Amurmur passed through the crowd. This was not exactly what many of them had come to hear. To a great many men in this audience, the stories of Marko Dalu and his strange abilities, coupled with his remarkable deeds, had come as a cry to action. Now, they felt let down.

"The rule of fear, of force and violence, cannot last," declared Dalu. "It must and will come to an end, since

force creates counter force. It is not up to us to dash ourselves senselessly at overwhelming odds, but rather to practice and teach those virtues that have been handed to us from the ancient days, in anticipation of the days to come, when many men will also practice them. Thus will all benefit."

Gradually, as he spoke, most of his hearers nodded in agreement. Not all he said was understood, nor was it meant to be. Only a few men still felt a vague dissatisfaction. As the crowd broke up, scattering to various pursuits, a few of these approached the philosopher.

"You preach against violence," said one of them. "Then you say in effect that the Empire is bound to be destroyed. Who, then, is going to do this?"

Marko smiled. "That is not a matter for you or for me, my friend," he said. "The teachers say, I believe, that the Empire is ruled by the Divine Emperor?"

The man nodded. "That is true."

"Then," argued Dalu, "cannot the Divine Halfazor take care of the purging of his own Empire?"

The man was obviously not satisfied, but he felt compelled to agree. He cast about for some way to pursue his questioning without venturing into the dangerous grounds of heresy. Back in the shadows, a small instrument was leveled his way. Suddenly, he felt that he was wasting his time. Here was no opportunity to build up a case

against this Dalu. He turned and walked away. The instrument scanned the group. Several others decided that further discussion would be profitless. They left, to report another failure to their various superiors. Marko smiled at their retreating backs.

"Do you who remain have any further questions?" he asked.

One man stepped forward. "We do," he announced. "At least, I do." He glanced around at the three men with him. "I feel that there must be something to be done other than just passive waiting."

Marko looked at the four men. "Do all of you have that feeling?"

They all nodded. "I do," they chorused.

"Then," Marko added, "are you willing to risk torture and death for your beliefs?"

The men looked uncertain. "I mean it," Marko assured them. "If you join me, you will never gain riches. You may suffer hunger, thirst, torture, death. Danger will be your constant companion. You will be censured, with no chance of retaliation."

One man shook his head. "This is a dismal outlook," he announced.

"Yes, but one which must be faced," Marko told him.

The man looked at the philosopher for a moment, then turned. Slowly, he walked away. The others stood fast.

"I am a fool," announced one of them. "My better judgment tells me to leave, but I am still here. What

must we do?"

The other two simply nodded.

"Follow me," ordered Marko. He turned, walking into the shadow of the cliff. He walked up to the cliff, then melted into it. The three men looked at each other, then shrugged. They, too, walked into the cliff.

Inside, they looked around in bewilderment. It was a cave, but the lighting was brilliant. Around the walls were arranged masses of unfamiliar equipment. Several men in strange clothing stood about the room. Marko Dalu was stripping off his robes. Now, he turned toward them, the light gleaming from his insignia.

"Gentlemen," he greeted them, "allow me to introduce myself. I am a member of a service which will remain unknown to your planet for many centuries. You have been chosen for that same service, provided you can prove yourselves fit during the next few hours. I think you can." He waved a hand and one of the uniformed men pulled a lever.

Instantly, the lights went out. Images started forming in the minds of the three men. Rapidly, they saw the early days of a planet. They saw the gradual appearance of man, then his development to a civilization comparable to their own. Empires arose—and fell. Once, civilization was wiped out, only to start anew from the very beginnings. Machines were developed—machines which the men somehow

understood, though they had never seen their like before. Wars were fought. New weapons were devised. Defenses were developed, then, new weapons. Lands were devastated. Finally, an entire continent was laid bare of life, but its final, despairing effort was decisive. As they watched, the immense forces interacted. Gravitic stresses, far beyond the wildest dreams of the weapon designers, developed. Then came complete catastrophe. At first slowly, then with vicious rapidity, the planet ripped itself to bits. As the images faded, a few rocks started their endless circling of the sun which had once given life to a great planet.

"That," said Dalu's voice, "was a drastic case. Now, a different picture."

Again, the images formed. This planet, too, had its wars, but after the fall of one civilization, international and interracial understanding developed. The wars lessened in severity, then ceased. Scientific devices, once developed as weapons, took their places in a peaceful, planetwide economy. The population grew, and, as life spans lengthened, the race spread to other planets, then to other suns. The images faded upon a peaceful and prosperous vista.

"The other side of the picture," remarked Dalu. "Now for the mechanics of the thing."

Hours passed. Finally, the three men walked out of the cliff again. Coming out into the blackness of the

night, they looked toward each other wordlessly. Then, each engaged with his own thoughts, they went their separate ways.

Inside the cave, D'lun spoke to Communications Technician Elkins.

"Well, what do you think of 'em?"

"Looked like a good bunch to me, sergeant." Elkins turned from his instruments. "When do they come in for their basic training?"

"We've got a flight to Base scheduled in two more nights. These three bring it up to twenty." D'lun stretched. "I'm going to send them back for the full thirty days, of course, then I think that'll be the last class. We've got more than we have to have, really." He looked at the communicator. "Besides," he added, "that last message you got doesn't give us a lot more time anyway. This group may report back after we've left."

"Leaves it up to Baltur to break 'em in?"

"Baltur's a good man," remarked D'lun. "He soaked up instruction like a sponge. He can break these people in and run the operation nicely. 'Course, he'll have help and close support from Base and Sector for the next twenty years, anyway. After that, it'll settle to routine."

"Yes, Kalidar, we have a certain amount of unrest here. There's no open rebellion, though." The district governor frowned. "No question about it, this man Marko is a disturbing

influence, but he's never preached revolt or sedition; on the contrary, he speaks of peace."

Philar leaned back, folding his arms. "Although my orders, governor, are not too clear, they do make definite mention of rebellious elements. Mention is also made of offenders. Surely some reports must have reached the Imperial Halls."

The governor nodded. "Of course. We have naturally reported the trend of public thinking. In answer, you are sent. Now, we suppose the Imperial Guard will eliminate the cause of the disturbance. We will take care of other matters as they arise. Immediate action is in your hands, Kalidar."

"I see. You may be assured we will take action. Now, about quarters. I have a hundred thirty-seven men."

The governor arose. "Oh, that is quite simple. The old camp is still in very good condition. The village guard is using only a small part of it, so you may move your men in whenever you see fit. There is an excellent inn across the square where you may easily find accommodation for yourself."

As Philar rejoined his troops, he was doing a lot of thinking. One of those little hunches that had visited him so often during his years of service was gnawing feebly. No question about it, something was wrong here. Something more than a simple case of sedition, but what was it? He took possession of the Casern, absorbed the village guard into his own company,

then called in his guardmasters. One by one, they filed in. Their commander greeted each by name, then:

"Gentlemen," he commenced, "we have a little investigation to make here before we can take action. I want your men to mingle with the townspeople much more than is usual."

Five sets of eyebrows raised, but there was a low chorus of acquiescence.

"Of course, any unusual comments heard, or any strange attitudes will be immediately reported." Philar hesitated. "Now, to my part. I want to interview a man, but I'm not about to just pull him in for questioning."

Dielo, previously the guardmaster-in-charge of the village, stepped forward. "Why not, sir," he queried. "We have nearly two hundred men now. Any insurrection could be put down easily."

"Possibly," agreed his superior. "Quite possibly, but why decimate the village unnecessarily?" He raised his hand as the other was about to speak. "No, I think I'll do it my way. Are any of our guardsmen feeling ill, or possibly suffering from the strain of our march?"

The master of the third guard smiled. "There's always Gorlan, sir," he remarked. "I never knew him to miss a chance to make sick quarters."

The commander's answering smile was understanding. "Good. Then let him take to his pallet, and call in the physician Marko. Obviously, this is a

case for one with knowledge beyond simple camp surgery." He looked the group over for a moment, then, "You may go now," he added.

As the guardmasters filed out, Dielo muttered to himself, "Cautious old fool! Someone should make up his mind for him."

"Halt!" The command was sharp. "Guardmaster Dielo, I heard that." Philar's hand fell to his sword. "Were you one of my regular men, I'd merely break you and give you a few days without water, but you have been a Guardmaster-in-Charge." He paused, a crooked smile growing on his lips. "By the Emperor's sandals, I wanted a sick man. Now, I'll get one. Draw your sword."

Dielo's sword left its sheath. "Now, here's quick promotion," he exulted. "I'm a real swordsman, not a windy old failure."

The clang of swords echoed down the lanes of the old camp, bringing guardsmen at the run. The two men circled about. Slash, parry; slash, parry, slash. Stroke and counterstroke. Now a retreat, now an advance. No blood drawn yet. It was an exhibition of practiced and formal arms play. No question remained in the minds of the observers. Here were masters at work.

Philar was becoming annoyed. This man's boast had been partially correct. Surely, here was no beginner. In fact, this man was very nearly as good as that old fieldmaster who had taught

recruits so many years before. Echoes of long gone lessons ran through Phil-ar's mind.

"You, there, keep that point up. He'll drink your blood."

An idea came into his head. He had often wondered about it, he remembered now. Most unconventional, but it should work. What's to lose, besides a head? On guard again, he disobeyed that first of all maxims. Casually, he allowed his point to lower below the permissible area. Instantly, Dielo seized his advantage. With a quick lunge, he beat down at the lowered sword, prepared to make the devastating swing to the head on the rebound. It was an easy stroke, and one which always worked, but this time, something went wrong. The lowered sword moved aside. As Dielo's blade continued its downward path, he felt something sharp slide under his kilt. A quick slash, and his leg became useless. He dropped to the ground with a grunt of surprise. Somehow, that blade which had come from nowhere swung over again, striking his sword hand. He lay weaponless.

The victor stepped back. "So," he thought, "the old, tried swordplay does have its weaknesses." He looked down at the victim of his strategy. The initial shock had passed. Pain was now coursing through the man.

"Please, sir," gasped Dielo. "Please, no sword art." He groaned. "Please make an end."

"No," denied Philar gently, "you

are one of my men, and it is my duty to take care of you. You are badly hurt." He looked up. "Quick, Zerjo," he called to a guardmaster, "get the physician Marko. This is a case for his skill alone." He pointed to a couple of guardsmen. "Staunch me this man's wounds quickly, then carry him to a pallet. We will await the physician there."

Marko Dalu sat relaxed. Wine cup in hand, he was engaged in talking to a group of friends. Out in the hills, others were listening on their small communicators.

"Gentlemen," he was saying, "we have completed the first phase. It has become increasingly apparent that the only method of encysting the principles of government, art and science already attained is within a cloak of mysticism. You, therefore, will probably have to become the founders of a new religion. We will arrange a spectacular martyrdom of Marko Dalu, which may be used as you gentlemen see fit.

"Naturally, you and your successors will be visited periodically by members of the Corps, who will give you assistance and advice, but to a large extent, you will be on your own. Again, I have to tell you, gentlemen, that this service you have chosen is a dangerous one. You are powerfully armed and protected, but there are restrictions as to your use of your arms. Some of you may suffer torture. Some



may die. I don't believe, however, that I have to point out to you the importance of your work, or the fact that your comrades will do all they can to get you out of any danger.

"I may add one thing. If any of you wish to withdraw, the way is still open." He sipped from his cup, waiting. The communicator was silent. None in the group before him spoke. Finally, one man stood up.

"I don't believe anyone wants to quit," he remarked, "so I would like to ask one question." He paused, looking about the room. "We have been given equipment and knowledge that is far in advance of this world of ours. Are we to retain this and yet keep it

secret?"

Marko nodded. "You have the knowledge of your world on the one hand, and the knowledge of other worlds on the other. These must be kept separate for many centuries. Advanced knowledge may be hinted at under certain circumstances, but the hints must be very vague, and the source must never be given. The equipment must be safeguarded at all costs. You all have demolition instructions which must be carried out at any hint of danger or compromise of your equipment. Does that answer the question?"

The man nodded. "Perfectly," he said. "I was sure of the answer, but I

wanted it clearly stated." As he sat down, Marko's apprentice ran in, closely followed by a guardmaster of the Empire, in full uniform. The boy was nervous.

"Sir," he started, "A guardsman—"

Zerjo thrust the boy aside. "No need for anxiety," he announced. "It is urgent, though. One of my comrades is seriously hurt. We would have you attend him."

Marko arose, smiling. "You know, of course," he remarked, "I am not regarded with too great favor by the governor."

"No matter." Zerjo was impatient. "Men say you are the best healer in Kleedra. Tonight, we have need of such."

"Very well, then." Marko bowed. "Let us go." He reached to an alcove, securing cloak and bag.

As they approached the camp, a crowd gathered. An angry murmur arose. Marko stopped.

"Easy, my friends," he cautioned. "Here is no cause for disturbance. I merely go to practice my profession."

From the rear of the crowd, a voice called out, "He better come out soon, guardsman." Zerjo looked around angrily, hand going to sword, but Marko placed a hand on his arm, urging him forward.

"Pay no attention," he reasoned. "They mean no harm. It is just that they do not wish to see harm done."

"Yes," growled Zerjo, "or they

want to start a rebellion tonight."

Marko urged him on. "There will be no rebellion," he said firmly, "tonight, or ever." They walked into the camp.

As they entered the barrack, Philar looked up. "The man's pretty badly hurt," he informed Marko. "See what you can do for him."

The physician knelt beside the pallet, his fingers exploring the wound in the man's leg. He shook his head. "It'll be hard to make that limb usable again," he said. "How did it happen?"

Philar looked sharply at him. "He talked," he announced, "when he should have listened."

"I shall take care, then, to guard my own tongue," commented the physician. He bent again to his work.

Philar stood watching for a moment, then, "I would have words with you when your work is done." He strode away, thoughtfully. Something was strange about this healer. Surely, somewhere, sometime, he had seen the man before. He cast back into his long and excellent memory. No, it was impossible, he decided. The man was no more than thirty-five years of age. That meant he was barely born when Philar was last in this district. Besides, he was said to be from the countryside, rather than the town or hills. Still, somehow, the man was familiar. He seemed like an old companion.

Finally, Marko stood up. "At least," he remarked, "the pain is eased. The

man will sleep now, and perhaps his leg will heal with time." He turned toward Philar. "You wished to speak to me?"

Philar nodded. "Yes. Come in here." He pointed to a small guardroom. "There are many things I want to ask you, and for the present, I'd rather speak in private."

He closed the curtains at the portal, then turned. "Now, then," he began.

Marko held up his hand in a peculiar gesture. "Awaken," he ordered.

"Now, by the sacred robes—" Philar's voice trailed off. "What did you say?"

Marko grinned at him. "I said, 'wake up,'" he repeated. "We've got work to do, pal."

Philar brushed a hand over his forehead. "Yeah," he agreed. "Yeah. We have, haven't we?" He pulled off his helmet, holding out a hand. "Gimme."

From somewhere in his robes, Marko produced a thin, brilliantly yellow circlet with a single ornamented bulge. Philar put it on his head, cocked it to one side, then slammed the helmet back on.

"C'm on, chum, let's take a walk," he growled.

A guard snapped to attention outside the portal. Absently, his commander returned his salute, and the two men strode out of the camp. As they left, Zerjo stepped up to his guard.

"What did they say?" he queried.

The guard shook his head. "Honest,

master, I don't know. They spoke in some foreign language."

"Foreign language?" queried Zerjo. He looked at the guard questioningly. "Was it one of the local dialects?"

The guard shook his head again; emphatically, this time. "No, sir."

"Wish I'd been here," grumbled the guardmaster.

The morning was clear and hot. Philar stepped gratefully into the shaded door of the temple. Glancing about, he strode rapidly back toward the altar. A priest came toward him, hands outstretched.

"The benediction of our Divine Emperor be upon you, my son," he intoned, "but this part of the temple is only for the priesthood."

Philar looked at the man sternly. "You are the head priest here?" he demanded.

"No, I am but an assistant, but—"

"Take me to the head priest," ordered the guardsman.

The priest turned. "This way," he said.

As they entered his sanctum, the head of Kleedra's priesthood turned angrily. "I told you I was not to be disturbed," he said imperiously.

The company master stepped forward. "I," he announced, "am the Kalidar, Philar dar Burta. I have come here to inquire as to why you have allowed a heretic and traitor to run at large for so long in your district."

The priest glared angrily. "You, a

mere soldier, dare to question me in this manner?" he stormed.

Philar met his eyes with a level stare. "I asked," he said firmly, "why you allow freedom to a heretic and traitor?"

The priest faltered. Somehow, the presence of this old soldier put a fog on his normally keen, calculating mind.

"Why do you allow the heretic and traitor Marko Dalu to walk the streets of Kleedra?" Philar demanded.

"But, the man is a civil offender," the priest protested.

Philar snorted. "Has he not scoffed at the Divinity of the Glorious Emperor? Has he not hinted at higher powers than those of our temple? Has he not criticized the conduct of the temple and of the priests? And, has he not done all these things in public? His are certainly more heretical than civil offenses. It is up to you, and you alone. What are you going to do?"

The priest spread his hands. He knew there was something wrong with this conversation. He knew that there were other plans, but he couldn't think straight; not with this furious soldier standing over him.

"What can we do?" he inquired.

"First, send your priests out among the people and have them denounce Marko as a dangerous heretic, an evil man, who would cause the destruction of the entire village. Go to the governor and demand a temple trial for this man. Have the priests hint to the people that if Marko is not

delivered to the temple, pestilence, fire and the sword will surely visit them." He paused. "I can assure you that fire and the sword are awaiting any open disobedience," he added.

The priest lifted his head. "These things, I will do," he said decisively.

Philar, Kalidar of the Imperial Guard of the Dalturan Empire, leaned back at his ease in his own quarters. At last, this assignment was nearly accomplished. Soon, he'd be able to go back and relax for a while. In the privacy of his room, he had removed his helmet, and the golden circlet glowed against his dark hair.

"Well, Marc," he was thinking, "I'm coming after you tomorrow. How do you feel?"

"Swell," came the answering thought.

"By the way, did you run to completion on this one?" Philar asked.

Marc was disdainful. "Think I'm a snail? Great Space, they gave me almost four years. I had the job done in three. I beat it all through their heads, then clinched it on the other side. Picked up more recruits than we actually need for the job, too."

Philar started ticking off points on his fingers. "Philosophy, Ethics—"

"Yeah, yeah," he was interrupted. "Philosophy, Behaviorism, Organization, Techniques, Ethics, the works. I even got time to throw in a lot of extra hints that'll take two or three periods to decipher. They've got physical and biological science, up to and

including longevity. They've got Galactic Ethics. I even slipped them a short course in Higher Psychology. 'Course, they'll have to do all the groundwork for themselves, but my recruits understand a good share of the stuff. When they're able to release their knowledge, this planet'll be on the team."

"Nice going, pal," Philar chuckled. "Well, as I said, I'm coming after you tomorrow, complete with a whole bunch of nice, tough Dalturan guardsmen. Hope your body shield's in good shape."

"You space worm," stormed Marko. "If you let those primeval monkeys get rough with me, so help me, I'll—"

"Ah, ah," Philar shook his finger, "naughty thoughts."

"Master Intelligence Technician Philar!" A third thought broke in sternly.

Philar groaned. "Oooh, I've done it again. Yes, sir."

"Attention to orders. After completion of your assignment tomorrow, you will march to the seaport, Dalyra. There, you will embark for the capital, Baratea. During the voyage, you will fall over the side and be lost." An impression of amusement intruded. "I'll be at the controls, sergeant, and for your sins, I'm going to bring you in wet. My friend, you will be so waterlogged that you'll be able to go without water for at least half a period."

"Yes, captain." Philar was doleful. He took the circlet off, holding it at arm's length and looking at it sourly.

"Thought control," he snorted aloud. "Thought control, that's what it is." He clapped the mentacom back on and composed himself to sleep.

Kloru Noile, High Priest of Kleedra, sat at his worktable. As he read, he nodded his head. Finally, he looked up. "Well, Plana," he remarked to his assistant, "looks as though the last of the despots has called it a day." He held out the paper. The man took it and read.

Informal Report

From: Barcu Lores, Security Technician Second Class

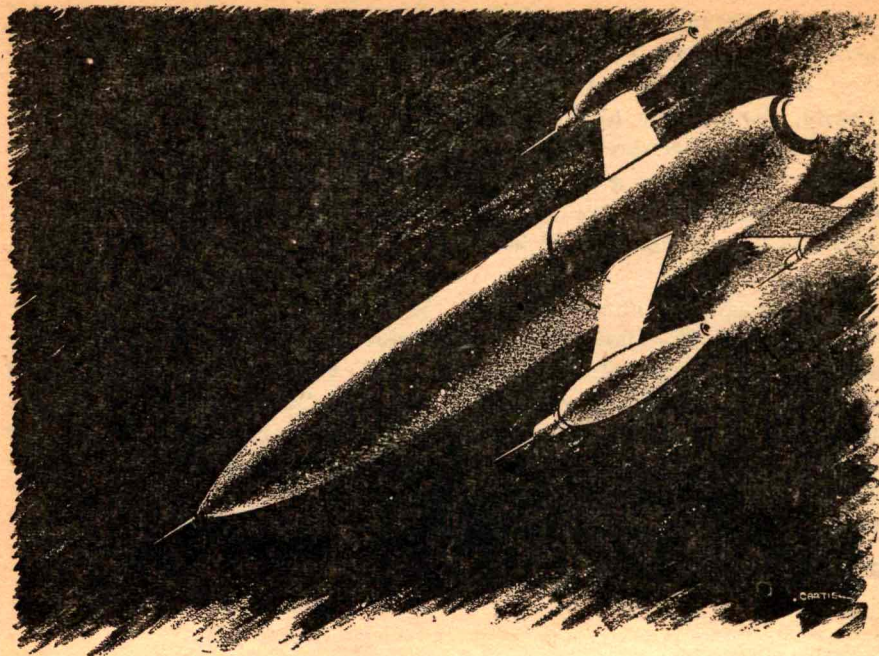
To: NCOIC, Philosophical Section
5/G3-4/572

Subject: Duke Klonda Bal Kithrel

1. Psychological work on the subject is nearing completion. Bal Kithrel has decided to allow elections of all magistrates, as well as three members of the advisory council. He is also considering a revision of the property laws. It is believed that this is the beginning of constitutional rule in this area. Work is continuing—

Plana handed the paper back. "I believe, sergeant," he remarked, "that we'll get a good inspection report this time."

THE END



SECRET BY LEE CAHN

The plans for the full testing of the guided missile were most carefully planned; one does, when trying out an active, atomic-armed missile! The plan did not include sabotage . . .

Illustrated by Cartier

Minutes of the Senate Committee on Military Affairs. May 10, 1962.

Senator Guy: Your name and occupation, please.

Mr. Schlosberg: William Schlosberg, engineer.

Senator Guy: What is your connection with the guided missile *Albatross V*?

Mr. Schlosberg: I was Assistant Project Engineer for guidance, for the entire contract.

Senator Guy: What were the principal specifications for the *Albatross V*? You may talk freely here.

S.: *Al* had an atomic power plant, so his range was unlimited. Maximum

speed was Mach 5—

G.: How fast is that in miles per hour?

S.: About twenty-eight hundred miles an hour at service ceiling, which was one hundred twenty thousand feet. Warhead was twenty-five hundred pounds—the missile was designed to take a *Mark VII* warhead, but I was never officially told its Radius of Kill. I understand unofficially it exceeded thirty miles. Len Johnson was Project Engineer on the warhead for the A.E.C.

G.: How about the guidance system?

S.: Accuracy was supposed to be plus or minus one mile anywhere on Earth. It was supposed to be invulnerable to the countermeasures expected to be available in 1962. In fact, the whole missile was supposed to be invulnerable. Yall Aircraft has been in the missile business for fifteen years, and *Al V* was the best we could make. It's all written up in the specs and the proposal.

G.: I have here a top secret letter from General A. S. Frederick of the Air Development Force. It asks you to make ready one *Albatross V* for live firing on March 21, 1961. What did you do when you received this letter?

S.: Well, first I canceled the March 1st firing, so we would be sure to have one good missile. Then I went down to the shop and tried to have Number Seven expedited so that if Five and Six failed we would have another chance. They promised they

would, but Seven wasn't ready until June 4th.

G.: Did you write to the Joint Chiefs?

S.: Yes, sir, I did.

G.: What did you write?

S.: I asked them not to use *Al* for a tactical mission. I knew it was; they don't fire live for practice.

G.: Why did you advise them not to use your missile, Mr. Schlosberg? Did you know what was going to happen?

S.: No, sir, I did not. *Al V* was still in his engineering test phase. These were handmade models, and we still had plenty of bugs to get out. He just wasn't ready. But they wouldn't listen.

G.: I have here your biweekly Progress Report for the first half of February. It says that all major difficulties have been overcome, and future emphasis will be on production planning. How do you explain that?

S.: Oh, that's just the Progress Report. Don't believe any of that. Uh, that is, the writing of Progress Reports is affected by other considerations than test results. The higher echelons tend to be somewhat optimistic when dealing with the government. I never stated that all difficulties were overcome, sir.

G.: That's all right, Mr. Schlosberg. No one is going to tell Yall Aircraft what you say here. We need the truth. What reason did the Joint Chiefs give for firing *Al* over your objections?

S.: Well, it seems Intelligence had them all steamed up over the sensational new enemy defense weapons, and *Al*'s specs sounded real good. And they HAD read that biweekly. Besides, this firing was to enforce an ultimatum, and for psychological reasons it just HAD to go through.

G.: I see. Your tone expressed some skepticism over the specifications. Did your missile meet them?

S.: Well, we met each one at least once, but we had not then hit 'em all at the same time. It takes time to create something reliable and trustworthy, with machines and people.

G.: Who was responsible that the missile be in operating condition on March 21, 1962?

S.: I was, sir, and Levasseur, system engineer for that missile, was responsible to me. He checked the operation of every part of the system, and we both observed the results on the automatic checkoff panel. It was all right, all right.

G.: Including the warhead trigger?

S.: No, sir, that was A.E.C. classified, and we never saw it or knew how it worked. The warhead crew handled that after we were done. The missile people are never allowed to know anything about the cargo. Security, you know. We just take it to the target. From there on it's on its own. This is all written up in the contract. Have you read the contract and the specs?

G.: Perhaps you could tell us how the

missile is given its instructions.

S.: A stack of punched I.B.M. cards are inserted into the orders slot. The cards are punched on the autobriefer according to the destination, flight program, special defensive instructions, et cetera.

G.: What instructions were you given for this mission?

S.: I was given no instructions, sir. General White's aide, Colonel Saunders, who had been taught how to use the autobriefer, went into the Briefing Room, locked himself in, and prepared the cards. The machine has a consistency circuit built in, which catches most of the impossible instructions. We were not told anything about the target, but we all knew it was Moscow. Security, you know. Any of my crew members who were present will confirm this. That's how we knew it was wrong. When *Al* took off east, he couldn't be going to Moscow; Moscow is pretty much north of Muroc along a geodesic. Levasseur and I looked at each other, and then went down to my office. We have a duplicate card punch and playback unit there, to check the missile cards, and to help in data reduction. We played back the flight Colonel Saunders had plotted from the duplicate cards. *Al* was heading for Washington, D. C.; time of flight seventy-four minutes.

G.: What did you do when you realized that?

S.: First I had a couple of my own people grab General White and Colonel Saunders, and lock them up. I didn't find out until later that "Saunders" was an enemy spy, and that White was merely his dupe. I couldn't take chances. Second I called Washington, the Pentagon. It took me eight minutes to get the Air Force Chief of Staff, and one more to get the President.

G.: Please try to remember your conversation as accurately as possible, Mr. Schlosberg. This is a delicate matter.

S.: Yes, sir. Well, they took it pretty calmly, I guess. Not much double-talking.

G.: But what did they *do*?

S.: First General Allen designated *Al* as hostile, and ordered out the interceptors and the antiaircraft.

G.: What effect did they have?

S.: Not very much. He flew over and past all the planes and most of the SA missiles. As I said, the interceptor hasn't been made that could shoot *Al* down. At least two SA missiles came within countermeasure range, and *Al* detonated both prematurely. Works something like a radar beacon. It's universal; fits any proximity fuse, including our own. It was developed originally for *Al III*, but it just got done in time for us.

G.: What did the President do next?

S.: He told me to hurry up and call *Al* back. I explained that counter-

measures made command-type missiles obsolete years ago, and that once *Al* was launched he was on his own. If I had put anything in *Al* to bring him home, the enemy could have captured him with it.

Then General Allen barked: "Well, what are your radar frequencies, pulse widths, and rep rates? Maybe we can jam it and deflect it into the ocean. It's your baby, Schlosberg; you must know what will stop it."

But for three years, we had all thought of every way we could to stop *Al*, and we had thought of the counter for each way, and built it in. If there *was* any way, I couldn't think of it in sixty minutes if I hadn't in three years. My job was to build an invulnerable missile, and I thought I had.

In answer to General Allen's specific question, *Al* used no radiation to locate himself, and therefore could not be confused by radiation. You can't jam it if it doesn't receive. This seems to me the best solution to the jamming problem; otherwise you lose yourself in a hopeless maze of frequencies, codes, decoders, and espionage. We rejected radar from the start.

Then the President got worried about Washington; couldn't decide whether to evacuate or not. Only a small fraction of the people could get out from under in sixty minutes, and a lot would be killed in a wild scramble. Of course, they would

be killed if they stayed, except maybe they would shoot *Al* down. General Allen remembered my protest, and asked me what the chances were *Al* would fail; that one of these unsuspected bugs would crop up. Well, we were running about one failure per two hundred minutes of operation, or one chance in three of failure. No guarantee that the failure would prevent *Al* from hitting his target, of course.

The President finally decided not to evacuate and to delay the warning until the regular warning system spoke up. It would thus seem a surprise attack from the enemy, which would strengthen the nation's resolve and our moral position before the world. If he announced that one of our own missiles was coming in, it would raise the devil with morale and national unity, not to mention his prestige. We would be the laughingstock of the world. Anyway, not many could be saved. He had his own plane stand by, however, and another for the Pentagon brass.

We were all sworn to secrecy, and no paper would dare print a story like that. Even if we did talk, it would only be a rumor, and they were already as bad as they could be. The committee will have to decide if it wants to disclose this episode to the general public.

General Allen proposed a lot of

foolish schemes; we had anticipated all of them. Some of his defense people's tricks were mighty clever, although none of them quite made it. I learned a lot from them which I will pass on to the *Al VI* project engineer.

G.: The committee is quite grateful to you, Mr. Schlosberg, for being so frank with us. Others who were involved were not so open. Could you tell us, finally, why your missile crashed inside the Pentagon courtyard without detonating? No statement has ever been released.

S.: I take a bitter pride in the fact that *Al* went precisely where he was told, well within his specified accuracy. He did not explode because the warhead trigger was sabotaged, by an enemy spy in the bomb crew. Despite their fetish of super security the A.E.C. harbored a viper.

G.: Those Communists are subtle! Scare us to death for an hour, and then complete the psychological destruction by not detonating it!

S.: Oh, they'd gladly swap the psychological damage for a good, solid explosion, Senator. I asked the bomb-crew spy why he did it, before the G-men took him away. It seems that "Saunders" worked for the Red Army Intelligence, while the warhead saboteur was an M.V.D. man. They just weren't co-ordinated.

THE END

THE CAPTIVES

BY JULIAN CHAIN

There are some things that are in the area of No Practice. Things once tried that can't be reversed—like suicide, or changing the culture of a whole people. Then, experimenting on a few . . .

Illustrated by van Dongen

The young woman smiled as she walked past the nightwatchman into the great building that housed the Department of Extraterrestrial Integration. The innocent name was belied by the guards who prowled the building, and the irreverent personnel of the department, who commonly referred to it as DEI, were often guilty of intending a pun upon Omniscience.

There were two guards in the main corridor now, dressed in the Department uniform, but both were familiar with Merriel Stevenson, secretary to Lloyd Best, Chief of the Interpretations Division. She nodded a pleasant response to their greetings and turned off into the passage leading to her own office.

Her objective, however, was nearer than that. It was Exit D, the unlit hall



that led away at right angles from the passage six doors before her office and as she turned from the main corridor she saw, almost with a sense of nervous reluctance, that this time it was going to be possible. Her appearance had caught the inevitable guard at the far end of the passage, coming toward her in his endless patrol. She walked up to him, acutely conscious of the dark exit to her right as she passed it, and threw a sidewise smile at him as she continued down the passage. The guard nodded at the familiar figure but continued his beat toward the main corridor, where he was obliged to appear and be duly noticed at the end of each round. He had not the slightest suspicion that this obligation alone preserved him from violence at the hands of the desperate girl who had turned and was now following him noiselessly. The procession of two passed Exit D; then the guard went on alone.

Merriel allowed herself ten perilous steps into Exit D, then crushed herself against the wall, her body shaking with uncontrollable tension. Actually the risk up to that point had been slight, if the guard had turned she had been ready with a question, and it would have seemed that she had followed him merely to ask it. As for exit D, her first step into it might have set off an alarm, but everything she knew indicated that the traps were at the other end. Now she was safe enough in the dark, unless an unlucky whim led the guard to throw his flash

into the corridor. Nevertheless, a momentary glimpse of him as he passed the exit set her to trembling again. She waited for his return round while making her simple preparations; then she unwound the ornament at her throat into a coated plastic wire, thin as a thread, and waved it in a slow vertical arc before her as she walked slowly down the hall.

Three steps, and the wire burst into blue fire. Merriel stopped, aghast. She had been just three steps from oblivion all the while she had waited for the guard to pass. The ultraviolet beam must, of course, impinge on a bank of photoelectric cells; interruption of the circuit would have set off every alarm in the place. Testing with the wire showed that the beam crossed the hall at right angles like a curtain, stopping a foot short of the floor. A moment's hesitation, and Merriel was wriggling flat on the floor, pushing her purse and waving the wire before her. Standing up again she could hardly suppress an hysterical titter. She became aware that during the ordeal she had clung desperately to an odd picture of herself—one that was practically two-dimensional.

The first door must be close now. The wire indicated nothing until it scratched against it. Not daring to think, Merriel fumbled for the lock and used Best's stolen key. It opened. A quick swish with the wire and she went through. After several guarded steps, she forced herself to return to relock

the door. It was just possible that the guard might be moved to investigate.

Halfway down the second corridor the wire burned again and Merriel repeated her performance. This time, however, while she still lay under the beam, the wire showed another, too close even to permit her to stand; and this curtain went all the way down to the floor. The girl lay prone for a full minute, trying to possess herself. After her rest she began, with infinite care, to tease the last resource from her purse, a tiny, battery-operated ultraviolet generator that threw a wide, flat ray. By the aid of the fluorescing wire she focused the ray on the same vertical strip of opposite wall on which the original beam impinged; that this was the left wall was obvious from the fact that the right side of the wire fluoresced. The photocells took the overload quietly and Merriel rested again, almost in a state of collapse. Working under mental tension in that awkward position, she was as wet as if she had just stepped from a bath.

When she had partly recovered, she wriggled past the foiled photocells, leaving the focused generator behind her. There was no hope of moving it past the second curtain without destroying its alignment. If there were another beam, she was defeated.

There were no others. In a moment she stood at the door of the Captives.

To this door she had no stolen key. The best that she had been able to do was to hurry a wax impression and the

subterfuge that gained her even that was of a piece with the senseless boldness of this night's work. She remembered the wax warm in her hand. "Is that mine?" she had asked, taking the key from Best. Then pretended to examine it, her fingers pressing it all the while into the wax in her palm. "I thought it was the key to my desk," she had said, returning it. Best had looked strangely at her; gentle, brilliant Best, to whom her heart had gone out, until she found that he was equally implicated in the unnatural crime of keeping human beings from a hundred different planets captive in the room just beyond, to study their reactions in the name of sociology. So she had had the key made from the impression, well aware that it might be imperfect. Another hazard, she thought; it was a miracle to have come as far as this. She took from her purse a tiny photoflood camera and felt for the lock in the dark. "The clever devils," she murmured aloud, meaning Best and all of them. She plunged in the key.

Merriel became a woman of light. Electric coruscations enhaloed her and an overwhelming force slammed her flat against the door she had tried to open. It was not intended to cripple, only to hold, but exhausted by her long ordeal, the girl could not resist. The breath was forced from her lungs and, caught awkwardly, her ribs snapped with the strain. The hall was flooded with light and alarm bells

were ringing everywhere. Even when her mind went dark she still could hear the bells ringing, endlessly ringing.

The central problem which confronts us when terrestrial control is extended to include a planet or system isolated for centuries from the mother culture, is social neurosis. It must be remembered that the great emigration which followed the development of the Shroedinger Drive was the uncontrolled product of a chaotic era and largely represented a protest against existing conditions. The emigrants were, therefore, drawn from the most dissident elements of the population and were motivated by various ideals of social justice which were unpopular at home. As a result of this, the main work of colonization was done by those men and women who least sympathized with the broad stream of the terrestrial culture of that day and who were most likely to develop social patterns different from that which they had left behind. When the forces which generated the first exodus were exhausted, a slow, controlled expansion continued, eventually destined to overtake the original colonists, who meanwhile, in effective isolation, developed the dissimilar and often bizarre societies that surprise us today.

"The forcible rupture of the wall of isolation protecting such a culture has been found in the past to lead to a chain of evils: mutual lack of comprehension, active resistance and lingering dislike

are the usual consequences of the attempt to bring the new society under terrestrial control. A culture is a unitary thing; according to a primitive proverb, "God gave to every people a cup of clay, and from this cup they drank their life." Terrestrial control in effect broke the cup by transgressing fundamental cultural values; deprived of these, the society lingers on deprived of significance and creativeness.

"So it happens that terrestrial expansion has been less a triumphal march than a spreading stain of destruction and planetary neurosis. We have had to relearn the lesson of the essential unity of a society and the catastrophes that follow the destruction of apparently unimportant elements of it. We have had to develop new attitudes of scrupulousness and unobtrusiveness in dealing with what seem, to us, to be aberrant cultures. Above all—and this is the chief continuing task confronting DEI—we have had to devise truly objective methods which permit us to evaluate the essential elements of new cultures without terrestrial prejudice. Only on the basis of such impersonal evaluations can a society be brought under terrestrial tutelage without irreparable damage or total annihilation.

The recorder clicked as Lloyd Best stopped dictating. He rose, went into the kitchen, and began fumbling with ice cubes to make a drink. Best was one of those men who could be relied on to mess up any manual operation; consequently, apart from his work,

the ordinary business of living seemed to him to be made up of innumerable small unpleasant tasks. He remembered ruefully the competence with which his secretary had whipped up drinks and a small supper to boot when she helped him with extra work in his apartment. Those nights were pleasant. For a time he had thought a deeper relationship would grow, but recently Merriel had been quite cold.

After some desultory splashing he bore his concoction back to the living room and sat down at the recorder, but did not immediately begin to dictate. He reviewed mentally what he had already said, trying to determine whether he had let any clues slip. Primer material for the DEI Interpretations Division training course could contain no allusions to the Captives, even by indirection. He sighed wearily. The Captives were one of the great secrets of the Department. Any publicity of this method of determining individual cultural motivations could be expected to result in an overwhelming reaction on the part of the societies concerned. No doubt the information derived from the study of the Captives was worth the trouble entailed by the need for secrecy, but Lloyd found it utterly distasteful. The endless hush-hush made it inevitable that there should be some who knew and some who did not, and destroyed in a measure the sense of a unified attack on the problem of motivations.

The attempt both to give and withhold information was a frustrating one. His mind sharpened to the double problem:

On a practical level, the evaluation of cultural motivations depends upon the analysis of trained observers and takes its place in the general discipline of contemporary anthropology. The subject of this study is the synthesis composed of both the individual and his culture. The appreciation of this synthesis was the chief masterpiece of the anthropologists of the twentieth century and the galactic politicians of the twenty-first and twenty-second neglected it to their cost. We have grown wiser since, and the Department of Extraterrestrial Integration is one result of this reform. It is in fact a huge laboratory of applied contemporary anthropology, whose findings permit Earth to tamper with the social structure of her daughters without the certainty of disaster.

Lloyd sipped his cocktail, choosing his thoughts.

It is obvious that anthropology attacks the problem of personality at a level where it is diffuse, statistical, and to an extent, subjective. No amount of training and experience guarantees a judgment free from the bias of the observer. Not until the mechanisms of personality and neurosis are laid bare will our solutions have the solid reliability which can be expected only when our study takes its place as a branch of physics.

"The study of mechanism in person-

ality has had a long history in human thought and a successful solution is not altogether ruled out. Indeed, it would seem that the central problems which obsess the human race all tend to work their way to complete or partial solutions of some kind. The philosopher's stone led to the atom bomb. Speculations on Man's place in the universe were answered by the Greeks, by Newton, by Einstein, and a score of later cosmogonists. So, too, the Artificial Man has developed from dim beginnings in myth and magic through the clockwork figures of the eighteenth century and the engines of the nineteenth to a crude, but not trivial, solution with the learning chess player of Wiener and Shannon. Even before such a device was built in the metal, examination of its conceptual foundations indicated that it could serve as a model for the study of mechanism in personality. Indeed the requisites for neurotic behavior in the chess player were stated: multiple bases for a determination; bias for data of a certain sort, and a faculty of association, upon which the bias operates so as to prejudice recall in a manner fatal to the making of correct decisions. Perfected models of this kind—

The visiphone clamored. Lloyd turned the thing on and saw the screen fill with the anxious face of Howard Raper, Director of DEI, speaking from the conference room of the Administration Division. Behind the director, ranking members of the department were clustered about the

long table while Joel Ferguson, of Security, paced the room.

"Can you come right away, Best? There's been a breach of security."

"Serious?" The director nodded. "Whose personnel?"

"Interpretations. One of yours."

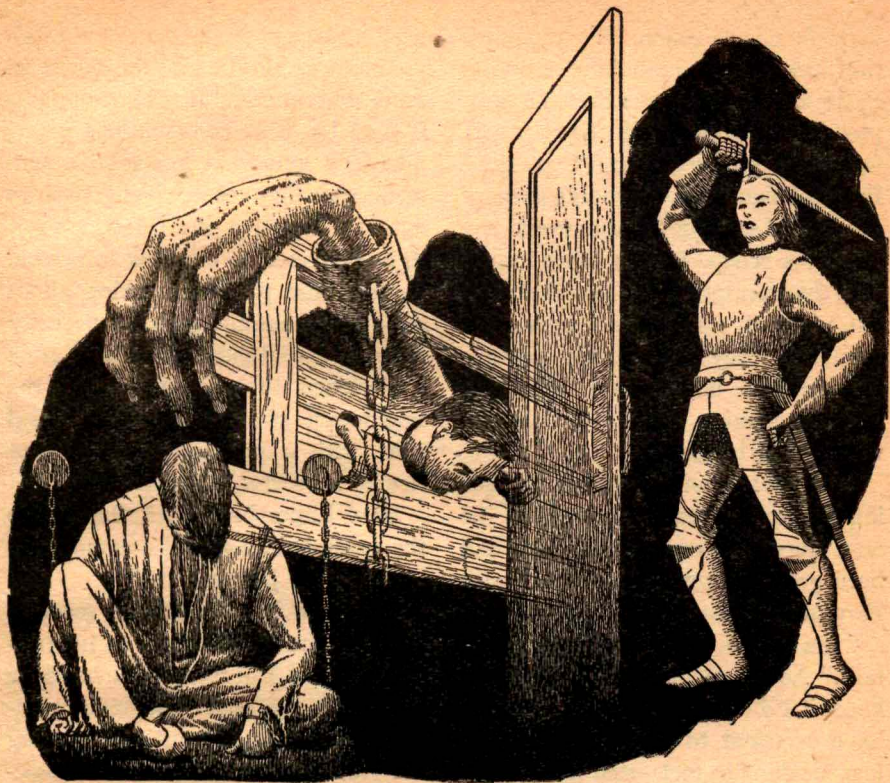
Lloyd choked down the impulse to ask whether the business concerned the Captives. Not on a public phone! He nodded at the screen, "I'll be right down." Raper canceled.

Lloyd fumbled about the apartment for his coat, his mind wandering. He knew, without knowing how he knew, that it must be Merriel. He reviewed her behavior without finding a shred of evidence for his belief, yet the strange certainty persisted. It dawned on him, finally, that he would be told just as soon as he got to the conference. After an heroic search, he found the coat and got out of the place.

The forgotten recorder scratched on in the empty apartment.

When Lloyd entered the conference, Ferguson was in the middle of his defense of Security:

"Sure, we could have made every cubic inch of the exit a trap, but it's not good security to give away a secret by advertising it! Think of the number of workmen who would have known that there was something worth guarding. As it was, we put in the spy beams as servomechanisms to open swinging doors and took the doors out later. And remember, we had a guard



in the corridor. And anyway, the precautions were adequate, at least at this end; you seem to forget that the girl *was* stopped!"

Lloyd found a chair, conscious of glances in his direction. Ferguson went on:

"And there seemed to be no reason for more than the routine checkup in this case. The girl had the usual record: college graduate, specialized in contemporary anthropology, (*it was*

Merriel, then!) field trips to the usual planets and so forth—the ordinary routine. Before she was transferred to Interpretations she had been on a number of missions in Trade Exploration. Not a hint of anything out of the way."

Raper broke in to suggest that Lloyd be briefed. Ferguson outlined the details, finally ending: "Apparently she stole the key to the first door and had an impression made for the second.

That failed, of course; it's an induction lock tuned to a hollow resonator in the key. It's obvious that she came prepared to photograph the Captives, for what purpose I can't imagine. Political blackmail, maybe. Or perhaps she figured some newspaper would pay her for a scoop. What's more important than her motives is how she found out so much about the Captives, or even that they existed. My guess is that there's been loose talk." He avoided looking at Lloyd, but the words hung in the air.

Lloyd was spoiling to take up the implication. Usually easygoing, he now nursed a resentment that had been growing ever since Raper's call; Ferguson was as good a target as any.

"It's quite possible there's been talk," he chose his words, "I don't know if I'd call it loose. It may never have occurred to you—and I'm not just speaking to Joel—that it's difficult to run a complicated project without talking about it sometimes. And if there's talk, people may hear, especially the secretary of the chief of a division. There is also the matter of correspondence. It's difficult to find a method whereby it can be handled without being read. A woman as resourceful as Miss Stevenson could pick up quite a bit of data without leaving my office."

Ferguson flared. "Every bit of inter-office correspondence is reviewed by Security!"

"Yes, but it isn't! I know the ordi-

nary messenger service funnels through your office. Maybe *trickles* would be more descriptive. But unfortunate as it may be, your conscientious young men lack somewhat in scientific acumen. After they censor the significance out of a report a few times, it's apt to be delivered to my desk in person. In fact, the plain squawking about some of the insane quirks of Security is apt to reveal more than the routine is designed to hide. Moreover, the asinine act of supplying a divisional chief with a personal secretary not cleared for secret information—"

Here Raper broke in: "Let's stop the recriminations. Joel was only trying to do his job properly."

"But did he? All of you seem to overlook the fact that one of the people for whom I'm responsible has been injured. I was under the definite impression that the precautions guarding the Captives were limited to detection!" Lloyd scanned the group. "You think it's strange that I should be concerned about Miss Stevenson? No doubt you believe her actions damn her beyond sympathy, but you forget that at present her motives are completely unknown. So far as I'm concerned, it's poor Interpretation to let the bare data speak for themselves; usually they talk only to one's prejudices. I'll suspend judgment until I know just what the girl was doing. Let me suggest leaving the matter in the Interpretations Division until we can make some sense out of it."

"The case is in the hands of Security now!" Ferguson was furious.

"This time Security will be permitted to resign its responsibilities." Lloyd's odd, flat tone made it clear that his statement was an ultimatum. Ferguson said not a word; there was little doubt that if it came to Lloyd Best's resignation, the department would rather part with a hundred Security managers. Raper broke the silence:

"We'll leave it at that. Lloyd will report back when he's ready."

The drained white face on the hospital pillow shocked Lloyd inexpressibly. Merriel Stevenson had always given him an impression of vitality and zest, as if life bubbled over in her; he felt an overwhelming guilt in the presence of the still figure. He moved a chair and sat beside her, at a loss for words.

Merriel stirred, half-conscious under narcosis which dulled the pain to something she could bear. "Lloyd," she whispered, "Lloyd." She seemed to have forgotten he was an adversary. Something deeper obsessed her. Her failure. Her failing them, the Captives.

"It's not fair," her voice was a dull monotone. "It's not fair. Why should they suffer because I wasn't strong enough? Is it right that their freedom must depend on my cleverness? Where's the justice in that? One more door and I could have freed them. One photograph in the paper! John promised! The Captives would be free now. The

public would force it; they wouldn't stand for that kind of slavery. Perhaps worse than slavery, perhaps vivisection!"

Lloyd listened with an amazement that slowly deepened into horror as the girl whispered on. The Captives, *the Captives!* The words struck with a new significance. Joel Ferguson's surmise came back to him: "For what purpose, I can't imagine; political blackmail, maybe. Or perhaps she figured some newspaper would pay her for a scoop." The girl simply wanted to help the Captives. To free them! The bitter incongruity overcame Lloyd and he laughed aloud. At the sound Merriel winced. Slow tears came.

Lloyd touched her cheek. "I'm not laughing at you," he said with a strange harshness. "At myself, a little."

Her plea came in a flood. "Oh, Lloyd, please help them! Nothing you can find, nothing you can learn, is worth that kind of torment! Enslaving them. Experimenting with them. How can you do that to people? How can *you?* I thought you were so different. So kind. I thought—"

Merriel stopped. Lloyd discovered that he was stroking her hair, trying to soothe her. He could think of nothing to say.

"You must help them, there's no one else now. I failed." The dark horror of Exit D swam over her. It was not the charged door she remembered, but the minutes she spent lying under the beam. "It was like a slow night-

mare lying there, afraid to breathe, trying to get the generator pointed. It seemed as if time stood still and I was there forever!" Sobs shook her. "Please help them."

Lloyd was standing over her, whispering fiercely. "It's all right. It's all right, Merriel. You don't have to worry about them; I'll take care of everything! Do you understand? Do you understand that everything will be all right?"

The girl stopped crying. Lloyd gripped her arms, half hurting, half caressing. Finally she smiled. "Go to sleep now and get well and strong!" There was a great deal more Lloyd wanted to say. Somehow Merriel divined it and was comforted. She closed her eyes. After a time Lloyd left.

He found the doctor at the door, waiting for the end of his visit. "How soon will she be over the effects of this?" he asked.

"Practically at once. You can continue your interrogation tomorrow."

The whole miserable morning rose up in Lloyd. "Do you take me for her inquisitor? That's not what I asked! How soon will she be completely well?"

"Broken bones need time to knit. Miss Stevenson has suffered other internal injuries also. None of them are very serious but it will be some weeks before she can leave here."

The matter-of-fact reply brought Lloyd to earth. He nodded and left.

Back at DEI he holed up in his

office, taking no calls. What a mess! *The Captives!* Why hadn't they given them some less obvious code name? And now Merriel lay in a torment of physical and mental agony and there was no way that he could see of getting her out from under a charge of espionage. The chief of a division of DEI might be a law unto himself, ordinarily, but a crime against the department was not ordinary. He had been throwing his weight around in unheard-of fashion as it was, lifting the case from Security. Probably they were under the idiotic impression that he was infatuated with the girl. He was just fed-up with the moronic Security routine and depressed with his secretary's innocent tragedy. There was one thing he could do anyway! His mind focused: "One photograph in the paper," Merriel had said. "John promised!" There was an accomplice in this, one who had permitted the unfortunate girl to risk her neck for the photograph and who was equally guilty of espionage. He could make an excellent guess as to who this John was. He clicked the interphone and asked for Ferguson.

"Ferguson speaking." The voice was frigid.

"Joel, I'm sending down a recording made by Miss Stevenson, just some office dictation. I'm sure one of your agents can get the inflection down in no time. Do you have material for a visual image?"

"Of course."

"I want her to call the editorial office of *The Messenger* and ask for John. That's John Lyons, the owner. If he speaks to her, she is to say that she has the Captives' photograph and will meet him. You can set the place. If he accepts the invitation, he is to be spirited to my office. Can do?"

"Surely." A pause. "Am I to know anything more?"

"I'm sorry, Joel, not right now." Lloyd hesitated. "Joel, I'm also sorry about the fuss last night. The news upset me."

"It upset all of us." Ferguson was cold. "That's all then."

John Manning Lyons watched Merriel Stevenson's image fade from the visiphone screen. Quite a woman, he thought. He smiled, becoming conscious again of the continuous roar that was the birth cry of *The Messenger*, a sound so sweet to him that he had refused to soundproof his office against it. To him that sound meant power, security, and an endless opportunity for self-adulation. *The Messenger* was a special kind of newspaper, with a purpose not apparent to most of its readers. It publicized scandal of a particular, visceral sort. It castigated scapegoats whose shortcomings were judged by the unconscious criteria of its owner-editor's peculiar psychology. It screamed. But its true character was known only to a few of Lyons' intimates and victims who appreciated it as an immense manifesta-

tion of his ego, a tool with which John Manning Lyons did with the world as he would.

The trouble was that Lyons had no clear plans for the world. He only had enthusiasms which resulted in violent, tentative campaigns which subsided, usually amid human wreckage, as soon as his object was gained. That object was simple and infantile. "Look at me!" he screamed, pinching and hurting. When the world looked, he was satisfied. An obscure sense of guilt led him to crave approval. *The Messenger* could not give him that, but it at least guaranteed attention, which he accepted as a satisfactory substitute.

Like many empty people, he was surrounded with a large number of conscientious intimates whom he periodically alienated. His power and notoriety made it easy for him to meet such people, and his own lack of purpose found, in their sincerity, something vital and necessary to which he was drawn like a parasite. Oddly, therefore, he was an excellent judge of principle and integrity and it was this quality in Merriel Stevenson that intrigued him. Merriel had made her way to his office to tell the story of her suspicions concerning the Captives in her characteristically simple fashion, showing her DEI pass card and talking about official business. The story of the Captives interested him; it was just the kind of thing *The Messenger* could explode about. But the sincere, vital girl interested him more, and it

was actually to win her approval that he ignored the undeniable element of risk in what was, after all, a case of espionage.

He could not print the story without verification, however. That meant a photograph. Merriel was willing to try if he helped her with some apparatus that could be made in *The Messenger's* machine shop; she needed an ultra-violet detector and a slit-beam generator. That might be enough, she thought, drawing on hints she had picked up in Best's office and her past experience with Trade Exploration, the pioneer division of DEI. Lyons fully realized that supplying the tools would make him an accessory and tried to temporize, meanwhile developing a personal relationship with Merriel in a series of luncheons and dinners at various exclusive clubs.

Miss Stevenson, however, was no easy romantic conquest. She had acquired a considerable degree of sophistication in Trade Exploration, where the aggressive males were rampant, their appetites sharpened by abstinence. There, Merriel was hard put to defend her somewhat parochial notions, but she did, and Lyons was no more successful. He finally saw that if he were not to lose the girl's friendship altogether, he would have to help her. After all, *The Messenger* could always be depended upon to bail him out of his responsibility.

He was delighted with Merriel's call. She had the photograph and *The*

Messenger had a new campaign. Also, if he proceeded delicately, he would probably have the girl. The world was a wonderful place! John Manning Lyons actually whistled as he set off to keep his appointment.

Wheeler had the door of the blue ground car open for him at the curb. The capable chauffeur tooled the big car into the stream of traffic with the calculated recklessness that was his compromise with the law and Lyons' habitual impatience. At the second intersection he was neatly rammed by a traffic control scooter. The officer got out, looked at his victim's crumpled front end and *tisk-tisked*. He weathered Lyons, irritated homily with fortitude and bore off the expostulating Wheeler, of whose driving technique, *in toto*, he seemed to disapprove, leaving Lyons to continue his journey in the convenient cab that drew up alongside. At the next corner Ferguson braked the cab to a crawl to take aboard extra personnel. Joel had supervised the operation himself and under his direction Security turned in its usual flawless performance.

Lyons sweated out a bad night under confinement. His first fury gave way to a clearer agony of apprehension under the complete disregard of his captors. Lyons was far from stupid. He could guess clearly enough at the identity of his jailers. More frighteningly, he could see the plain implication of their careless audacity; they

feared neither him nor *The Messenger*, and the best guess was that they had no intention of ever releasing him to use the paper as an instrument of reprisal against them. His mind dwelt upon an endless variety of alibis and excuses, but nothing came clear. Deep underneath there was another goad that drove and confused him. Merriel's betrayal. Every word she had spoken over the visiphone, every lying expression on her attractive face, was burned into his brain. He convinced himself without effort that his intentions toward her had been more than honorable-altruistic, even. And yet she betrayed him! Him, John Manning Lyons, mortal extraordinary! It was a touching drama that his wounded ego wove about himself like a cocoon.

It was to Lloyd's intense disgust that he found himself playing spectator to this same drama. Long before he had ever met Lyons he had had a clear idea of the man. The Interpreter of a hundred cultures could hardly fail to assess accurately the neurotic mind behind such a publication as *The Messenger*, but even he sickened at Lyons' monotonous cursing at the girl whom he remembered in her bed of pain. Ferguson had been busy. On Lloyd's desk were the coated wire detector and the ultraviolet generator that Merriel used. Beside them there lay the tools that had made them in *The Messenger's* machine shop, and a photostat of the work order for them, bearing Lyons' signature. The latter

waved them away.

"I admit to them. I admit to helping her. But she did it all! She planned it and then framed me! You know that. You know she called me to have me met by your agents. All that talk about humanity!" He went back to his ferocious, monotonous cursing.

"All that talk, whatever it was, hardly diminished your responsibility as an accomplice in espionage. Also, Mr. Lyons, I'm sufficiently acquainted with that scandal sheet of yours to absolve you of any altruistic motives in the case, the victims of your many campaigns of vilification attest to that. No. You were out for a sensation, and this time the Department of Extraterrestrial Integration was to be the victim."

"You're not the judge of my morals! If you're going to judge motives, you might better concern yourself with that stinker Stevenson!"

Something vicious stirred in Lloyd. "But you see, I *am* the judge of your morals. In fact, that's just what I am! No doubt what you did lays you open to imprisonment; perhaps something even more drastic." He let the words sink in. "But here at DEI we have a rather unique idea of justice. In our own way we try to make the punishment fit the crime, and we have more facilities to do it successfully than most agencies of justice. Long before you undertook the overt crime of espionage you'd made it plain that you were in our society, but not actually

of it. Under the cloak of *The Messenger* you've lied, slandered and destroyed at will. You've reveled in the degradation of your victims. You have done infinite harm because our culture does not anticipate your kind and is not geared to defend itself against you. But there are quite a few societies in the galaxy that can deal with you quite well. In fact, I can think of one where almost every individual is an irresponsible John Manning Lyons, fortunately without a *Messenger*.

"So you see, your morals concern me deeply, because I have to select a culture where they can operate without damage. And that's where you're going; to a planet where every man's hand will be against yours, as yours has been against that of every man. There, there will be no chance to injure the tender and unsuspecting; everyone is tough and everyone suspects."

Two guards came in to lead Lyons away. At the door he turned to speak from a sick stupor: "I'm to suffer all this because of a frame-up by that girl!"

Lloyd motioned, stopping the guards. "I'll not let you go under a misapprehension. It's not for Miss Stevenson's sins you're paying, but for your own. She did not betray you. It's the other way round. You let her try to get a photograph of the Captives for your rag. As a result she's in the hospital, and it's just good luck that she'll recover. That conversation you had by visiphone was with a carefully con-

structed apparition, by courtesy of our Security Division."

Lyons stared. Somehow, of all things, this was hardest to bear. The sudden removal of someone he could blame and hate left him empty and limp. The guards led him away.

The Interpretations Division was, by its nature, not so heavily pressed for actions and decisions as most other divisions in DEI, but as the days passed and the work piled up on Lloyd's desk, his defection began to hurt. Lloyd was an unusual sort of executive. His natural inertia combined with his distaste for petty detail protected him from the endless conferences, co-ordinations and demonstrations so dear to most managers. Partly, this was necessary work and the efficiency of his division was somewhat impaired by this neglect. There was some clear gain also, since the lack of imposed co-ordination resulted in a necessity for closer co-operation on a working level among the people in Interpretations and the division naturally adapted in that direction. Lloyd Best's contribution was of quite another sort; it consisted of his ability to correlate data into pertinence and often to point to a solution in a single act of intuition. This gift, combined with downright technical brilliance in the field of contemporary anthropology, had earned him the often reluctant respect of the other DEI executives and the enthusiastic admiration

of his subordinates.

The fact that Lloyd's relationship to his people was that of consultant rather than co-ordinator made things more difficult when his help was withdrawn. Only a few mistakes were made, but these tended to occur at a fundamental technical level, where they could not be rectified by mere executive patching. Naturally there was talk, and Lloyd was aware of it, but there seemed to be nothing he could do. The marvelous capacity for concentration was gone. It was distracted by another problem, that of Merriel Stevenson. That seemed equally insoluble. He remembered his promise: "I'll take care of everything!" But still the charge of espionage hung over her like a thundercloud. He could see no answer, and his sudden attack of professional incompetence sapped his self-confidence further. Finally his futility drove him to seek help. He went to see Sam Pennington.

Even among the myriad characters of DEI, Pennington stood out as an eccentric. Tall, thin, and completely bald, he looked quizzically at the world from beneath pencil-thin eyebrows. In a smooth-shaven era his face was dominated by the thickest, blackest mustache imaginable. He also sported a pipe, surely the last in existence; the antipenultimate specimen must have been discarded decades ago. His irreverence, especially to his superiors, was a byword. And withal, he was probably the most competent psychologist in

the galaxy, at least in so far as his specialty was concerned. He was in charge of psychological conditioning for DEI and responsible for the emotional attitudes of every agent who missioned out. It was said that he could strip a bigoted novice of his terrestrial mores in an hour and graft on a new set in less time than that. It was also said, and with more truth, that he was paid for the synthesis but that he *enjoyed* the analysis.

The pencils of Sam's eyebrows lifted as Lloyd came in. He had processed Lloyd a number of times, of course, during the latter's phase of field work. That was quite a while ago; manipulation of division chiefs was frowned upon. He waved his visitor into a chair.

Lloyd accepted with reluctance. He knew that chair, with its hidden hypodermic; it was known throughout DEI as "the narcoseat."

"Missioning out?" asked Sam. "I'd have guessed your hide was considered too precious to risk."

"No. Personal problems. I can't seem to think clearly any more, and Interpretations is going to ruin. And so am I."

Sam was naturally cleared for everything and a little skillful cuing brought forth the whole story, beginning with Raper's midnight call to the Security conference, which the psychologist had also attended. Lloyd at last guessed the function of that notorious pipe of Pennington's; he used



it almost as a conductor's baton, guiding the recital with subtle prompting. At the end of the story he emerged from a cloud of smoke.

"I suppose I'm expected to help," he observed, "but I don't know how. This is a bit different from agent processing. It's not too hard to pick apart the tissue of nonsense that serves most people as an ethical screen; at least it's easy to do it to an extent which makes possible the planting of enough associations and inhibitions to prevent

them from exploding the first time some extraterrestrial violates their sense of fitness. It's a very superficial veneer I give them. Your case is different. That loss of efficiency shouts of an internal conflict, and even a wee bit of self-punishment. And I can't tamper deeply with a division chief, it's too apt to upset that just-right equilibrium that made him effective." He permitted himself a grin.

"At least we can take a look and see what the problem is. Lean back. It's the right shoulder, you remem-

ber."

Lloyd leaned his shoulder into the cushioned chairback. He thought he felt the tingle of the hypospray. "Let's go back," he heard Sam begin, "back to Raper's call and your intuition that it concerned Miss Stevenson. Strange, that; knowing before you were told. Remember. Your apartment. You knew at once—" The voice droned on.

Lloyd emerged into consciousness sharply under the influence of the neutralizing hypospray. He found that a table had appeared between the psychologist and himself, bearing a tray of cakes and a coffee-maker of hoary design from which Sam was filling a cup. He passed it to Lloyd and indicated the cream and sugar, in a silver service. The whole antique performance tickled Lloyd to the point of open laughter.

"Adequate clinical response," Sam noted. "Have you ever stopped to think, Best, of the real function of the odd social ceremonies on the planets you study? They are all minor sacraments, really. They relieve the individual of the responsibility for maintaining his identity during the period of participation. Very tension relieving."

"Very broad statement, rather." Lloyd attacked the cakes with relish and savored the satisfying warmth of the coffee. He felt strangely light. A sudden suspicion entered his mind and he bent a sharp glance on the psychologist.

"I *have* just stopped to think that

you don't rely altogether on coffee to induce postanalytical euphoria in your patients. In fact, my diagnosis would tend toward intravenous alcohol."

Sam's eyebrows arched in a pretense of injured innocence. "A downright attack on my professional ethics, no less. Have another cup."

Through the distraction of the induced euphoria and the small talk, there crept into Lloyd's mind a sense of the old trouble. He realized with a start that he had actually forgotten the purpose of his presence here. Sam noticed the reaction and nodded.

"Let's get to it then. Don't neglect your coffee, though; half of any therapy is the realization that life still has something to offer even after the original sin has been committed. Not that I'm prepared to impress a solution in your case." Lloyd looked askance. "Yes, impress. Or if you prefer, suggest, guide, or even bully. Or whatever term describes the happy discovery on the part of the patient of the promised land so suspiciously familiar to his analyst. The problem being quite simple and the patient of brilliant mentality, and even"—Sam let open irony leak into the words—"trained in Interpretation, I'm going to adopt a most unprofessional approach, being quite prepared for failure. I'm going to give you my own interpretation, which you can reject by whatever intricate and fallacious process you will. Remember, however, that I'm quite good at

this sort of thing. Otherwise your agents who pass through my hands would be in sad case.”

Lloyd reacted to the implicit brutality of the psychologist’s statement. “You’re right about being unprofessional. Slightly vindictive, too. Maybe you need a bit of analysis yourself.”

Sam grinned. “I’ll visit your couch sometimes.” He sipped his coffee.

“All right,” he said. “You’re infatuated with Merriel Stevenson. Up to the ears.” He waved away Lloyd’s protest. “I know your objections. I’ve just spent a little time with you. Remember?” Lloyd realized that there *had* been an analysis and subsided.

“I’ll come to that later. Meanwhile, look at the data. That odd feeling, after Raper’s call, that the breach of security concerned Miss Stevenson; can you explain that?” At Lloyd’s silence, Sam went on: “All right. I suggest that it only amounted to a compelling wish that the girl *were* involved.”

“You say I loved her, but I wanted her to be guilty?”

“Certainly. Your relation with her had chilled. It appears now that the cause of that was her interpretation of your part in the case of the Captives. But you didn’t know that and the rejection you felt is the reason for your subsequent hostility to the idea of loving her. Since the tender emotion was present, however, you welcomed the notion of her being involved, since

that would give you an opportunity to help and defend her, and re-establish the broken relation. White knight Best! And defend her you certainly did. I was at the conference, you know, and I saw you ride Joel Ferguson down like a rabbit in Miss Stevenson’s behalf. I thought at the time that your performance was slightly less than rational. I think even you would admit it was overdone.

“I pass over the tender scene at the hospital, but really, Best, that’s hard to misinterpret! Casualties are hardly unknown at DEI, even in Interpretations. None has affected you like this before. We come now to the summary disposition of John Manning Lyons.”

“Do you suggest that that was a personal matter!”

“I do. Oh, I admit the notorious Lyons was something you’d expect to turn up under a wet rock and that your decision was both justified and in the best tradition of DEI ruthlessness. We’re gentle with the natives but awfully hard on terrestrials! What I’m pointing out is that your action there was not in *your* tradition. You have a well authenticated reputation for tolerance and permissiveness at Interpretations. No. Lyons, like Ferguson, did not suffer for his obvious shortcomings. His true crime was his complicity in the adventure that harmed your darling. That, and perhaps a trace of jealousy on your part. Obviously he knew Merriel well.”

“Quite a set of nasty motives you

attribute to me.”

“A set of submerged motives, yes. Rejected ones. But they explain the inner conflict that is disabling you now. Partly it is the guilt you feel for your recent actions growing out of those motives. But mostly it is your ambivalent attitude toward Miss Stevenson, growing out of your feeling for her together with your hostility toward her for her past rejection of you. That rejection, which is so easily explained by the mess about the Captives, has defied resolution until now because it has never even been acknowledged. That is the great trouble. Not how to clear Merriel, as you’ve told yourself. *That* would be a small matter for a division chief of DEI, who habitually manipulates planets! But whether to clear her at all, or make her pay for her rejection of you.”

As Lloyd sat silent, Sam continued. “There’s a simple solution. Accept your past actions with the results of which, if not the motivations, no one can quarrel. As for the comely Merriel, I’ll tell you an open secret. Up to a while ago, her evident admiration of you has been a source of amusement to the department and a disappointment to some of its more eager male members. Clear her, reconcile her to the Captives, and win the girl. Thus speaks Pennington, renowned for advice to the lovelorn.” He grinned.

After Lloyd left, he poured himself another cup of coffee. No one would ever guess from the recent talk, he

thought, that he actually liked Best.

On the day that Merriel was well enough to leave the hospital, Lloyd sat in his office, waiting. He was thinking of Pennington’s analysis, wondering if he really accepted all of it. Much must have been true, he admitted; certainly the problem of clearing Merriel had been childishly simple, once he had summoned himself to address it. A talk with Raper and Ferguson had sufficed, without even the expected objections having been voiced. Unknown to Lloyd, Pennington had interviewed them previously and his acid diagnosis had been effective. As for his own feeling for the girl, the state of apprehensive expectation in which he found himself waiting was confirmation enough. His uneasy mood was broken by Merriel’s entrance.

She was healed but still pale, and in a turmoil of uncertainty. Dimly she remembered Lloyd’s visit to her sickbed but the comfort he brought wore off as the weeks passed and he stayed away. Only today had she begun to hope again, since she had been notified of her appointment with him and permitted to come to the department building without a guard. She smiled at him doubtfully.

“Feeling better?” he asked

Merriel nodded. “I expected you to come again, somehow.”

“I was in such a mess here, trying to straighten things out. I didn’t want to come till I could tell you that every-

thing was all right."

An inner radiance brought a glow to the pale face and enriched the girl's voice. "It *is* all right then. The Captives are free!"

"Let's talk about you, first. It seems the mess you were in was all a silly mistake. As my secretary, clearance had been requested for you for all security matters. That clearance was actually confirmed the day before your . . . adventure. So there's no question of a security breach."

"Thank you, Lloyd." Merriel found her eyes were moist. Two years at DEI gave her a vague conception of the heroic measures needed to make that "silly mistake" happen. "And the Captives?"

"They are here. Nothing has changed that."

A sense of outrage and betrayal swept her. How could she have let this man deceive her twice! "Why did I trust you again?" She spoke in a strangled whisper. "I needn't have come here. I could have gone to the newspapers instead! Do you think that I wanted to save myself?" Her voice rose to a shout. "You'd better imprison me quickly! I'll scream on the street to save them!"

"Be quiet," said Lloyd. "I'm going to show you the Captives." The shock of surprise silenced her.

"Why not reserve your decision until you see them? There have been more mistakes than one in this mess; the Captives can hardly be said to be

mistreated. When you see them you will agree, and the whole affair can be closed."

Merriel was past believing him. She spoke with hopeless desperation. "What's to prevent me from pretending, until I can slip away and bring them help? That's just what I'll do!"

"Look at me, Merriel." And when the girl lifted her wet face, Lloyd spoke to her, but she was not to understand the significance of his words until later. "You will agree with me about the Captives. But whether you do or not, you will be guarded as long as you live by a member of this Division. Now come."

The walk through Exit D of hated memory was like a dream to Merriel. A guard came with them and unlocked the first door and the second. She heard Lloyd speak. "Look at the Captives," he said.

There they all were, the Centaurian, the Rigellian, the people from far Polaris, members of all the races of Man. And a greater wonder: invisibly, the planets themselves were here, for the Captives were growing, learning, each in his own home environment. But the process was invisible, for the environmental data were fed to the Captives in coded tapes, and the mental growth of the Captives was a matter of changed resistance in a transistor, a more complex pattern of electronic charge on the semiconducting dielectric of a memory pool. Merriel

looked without comprehension at the great calculators.

"What—?" she whispered. "What—?"

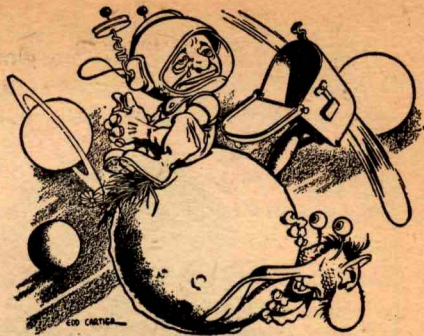
Lloyd felt an acute disappointment. He had fancied that Merriel would understand at once that these were the Captives; these learning calculators that served the scientists of DEI as models for the people of the planets, models upon which proposed measures could be tested without the risk of social destruction, and the existence of which must be forever hidden from their human counterparts if their usefulness were to be maintained.

"The story goes," he smiled, "that an engineer, telephoning his laboratory, where extremely advanced calculators were being developed, was told: 'There's nobody here but us complicated electronic devices.'"

Comprehension came to Merriel at last. She gave the Captives one last glance and looked back down Exit D, remembering her ordeal. She thought of the slow, terrible minutes, wriggling under the beam, trying to liberate—these! She began to laugh, a choked, hysterical giggling that shook her and grew until Lloyd, concerned, put his arm about her shoulders. His touch steadied her. Poor Lloyd! What a trial she had been to him! She felt a warm glow of affection as he held her. What had he said, minutes ago in his office?

She turned and looked up at the man who would guard her as long as she lived.

THE END



MOVING?

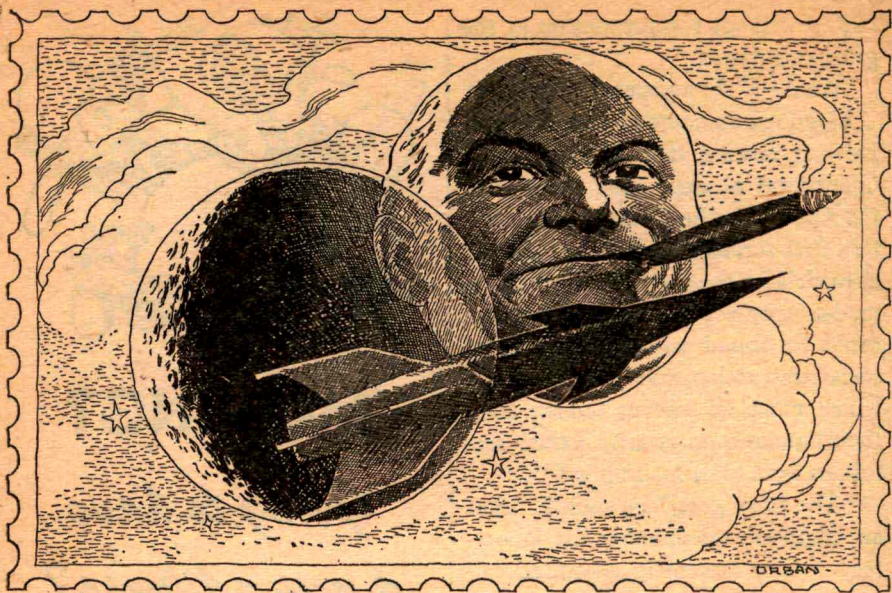
*Going to have
a new address?*



We can't send your regular Astounding **SCIENCE FICTION** along if you don't warn us ahead of time. If you're going to move, let us know six weeks in advance. Otherwise you'll have a neglected mailbox!



Write SUBSCRIPTION DEPT.
Astounding SCIENCE FICTION
304 East 45th Street
New York 17, New York



STAMP FROM MOSCOW

BY STEVE BENEDICT

An old stamp can be quite illuminating as to what aspect of living seemed noteworthy to the people of the time. A stamp can be quite informative, in fact . . .

My kid, Rueben—he's a rare lad, ten and a half—goes bugs over things every now and then. A while back it was marbles. They lasted about two months. Then came kites. Just now it's old postage stamps. He spends all of his allowance money, besides part of his lunch money, on them. From morning till bed time all you hear is stamps, stamps, stamps! All the kids in the neighborhood are going wild over stamps:

"Cuban five centavos, issue 1898, blue, for that there old New Zealander? You're nuts! Give you two Columbia Expositions and a two-pence Nyassaland."

"Nyassa, like fun! I'm stuffed with

'em. Throw in that Trinidad—”

“Trinidad! I paid ten cents for it, you . . . you grafter!”

And so on, day and night. The kids even dream of stamps. At least mine does. I hear him talk in his sleep.

He even tries to interest me in them. “Lookit, Pop, gee-rafts,” said he to me only the other day, showing some large colorful stamps from somewhere in Africa under my nose. “And this here’s the Landing of the Pilgrims Anniversary issue. And here’s a two cents red Hudson-Fulton. There, lookit this ten kreutzer—”

“Aw g’wan to bed,” said I, trying to sound rough, which by nature I ain’t. “No ten kreutzers worth of anything interests me tonight. I’ve got a kink in my back from welding armor plate eight hours in that shipyard.”

But the kid is persistent. He has some Argentina stamps of all colors with good-looking dames on ’em. “Swapped Mickey Grogan my set of 1902 issue American and some Filipinos for them,” he said.

I nodded sleepily. I feared a touch.

But the kid went on. “And this one, Pop. Lookit! A Jap ten sen. Tommy Hooper sold it to me for three cents. I still owe him two, Pop.”

Oh well, you’re a kid only once in a lifetime, so I smiled and mumbled something about that being great, but just then I didn’t have two cents on me and sorry.

My smile must’ve given the kid en-

couragement. He drew closer. He planted his stamp album smack on my lap. Soon he was turning the pages real fast, reeling off the countries like a streetcar conductor reels off his stops.

“German,” reeled the kid, “a pre-Hitler issue, Pop. Lichtenstein, *drei pfennig*. And here’s a Hungarian from during the depression. Lookit, Pop! One million pengos. Wow! It took a million bucks just to send a letter. Money wasn’t worth much there at that time, was it, Pop?”

“Sure wasn’t,” I agree, a bit interested now. Who wouldn’t be when the talk gets ’round to a million bucks?

The kid continued turning pages. “Sweden and Norway. Togoland. Israel. Mauritius—that’s an island, Pop. And here’s some from Newfoundland. And Russia—”

“Russia?” My eyes popped open.

“Yup!”

“Gosh! We sending mail there?”

“Oh, but these are old stamps, Pop. Before the Revolution. Pictures of the Czar on them even. See? Ten kopeck, green. Half ruble. All pre-Bolshey, Pop. That is, all except—”

He frisked about the pages a bit then stopped suddenly where there’s a solitary small green stamp pasted in the center.

“All except this one, Pop.”

There’s pride in the kid’s voice. He tells me that he’s the only lad in the whole neighborhood who’s got a

stamp like that. It's so rare, in fact, that not even the latest catalogue shows it."

"Maybe it's the only one ever issued, eh Pop?" My kid's eyes are big on me. "I'm keeping it. Jerry Schwartz offered me his hard-to-get yellow and green Bulgarian—"

"Eh?"

"It's the only after-the-Revolution Rusky stamp any kid round here's got," went on my kid. "A 1951 issue!" "1951! Where'd you get it?"

Well, the kid told me. Some other kid, who lives in Brooklyn and who had come up here to the Bronx on a visit and who knows hardly anything about old stamps, has a brother with the Marines in Korea. During a battle this Marine bumps a big-shot Chinese officer, and while searching him they find a letter with this funny looking stamp on it. The Marine knows his kid brother's bugs on stamp collecting so he tears it off and sends it to Brooklyn. The kid brother, not knowing the stamp's real value, swaps it off to my Rueben for a Morocco half franc, a Netherlands blue 1930 issue and two Swiss air mails."

At least that's the story my kid gave me, and he ain't much on lying. "Lookit, Pop," he said, pointing. "Them Rusky sure got funny notions about stamps. You'd think they'd put Stalin's picture on them with his pipe in his mouth, but no. Just lookit this. A fat-face guy smoking a big cigar! Don't that blow your

hat, Pop? Some picture to put on a stamp, eh?"

He shoved the album under my nose and stared at me. It's a big denomination stamp, unless there's an A 1 inflation in the U.S.S.R.

"One hundred rubles," I read, for that much is easy to make out, even from the funny alphabet they use. "Wow!" I cried. "Where'd that package go to? Twice 'round the world?"

"It's a letter, Pop, not parcel post," corrected my kid.

"Just the same, Son, one hundred berries, even in Rooshian money, ain't hay."

I look hard at the bit of green paper. The fat-face guy with the cigar sticking out of him is clean-shaven, so it can't be Old Joe. It ain't Molotoff either. Maybe it's . . . no, Vishinsky's got a sorta skinny-like face. Besides he wears glasses. Or doesn't he? I can't remember. I ain't seen a Vishinsky picture for a coon's age. It ain't no general, that's sure. Generals all wear stiff collars. A scientist, maybe, or even a poet? Tolstoy? No, he had long whiskers. I tried to read the writing but all I could make out is the word "rubles" between the two "100s." That's where the money value is on all stamps anyhow. Besides their "R" is almost like our own."

I pulled the album close to the light and peered hard through my specs. There's a black post office cancellation on the stamp and I could make out

part of the date: 22nd of some month, year 1951. Also the word "Moskva," which is the way they say Moscow. That's where the letter must've been mailed; or received. The rest is blurry. Most of the stamp is covered with that black smudge all post offices seem to use.

I handed the album back to the kid. "Hang on to it," said I. "It may be worth something."

The kid answered that I can bet my sweet life he'll hang on to it.

Days went by. The giants were playing the series, or something. I'd almost forgotten about that stamp when one of the guys at the shipyard happens to mention that his kid's regular nuts about stamp collecting.

I grinned. "Mine, too," said I. Then I told him all about that strange stamp from Moscow. We talked about this for a while and he asked me why didn't I show that stamp to old Gregory Sokoff, the shipfitter.

"Old Greg reads Rusky," said this guy. "He was born there. The Bolshies ran him out during their revolution."

Well, that Sunday I happened to meet Gregory in the local barroom. He was crying his eyes out into a full pint-size drink of vodka about some relatives he had left in Siberia thirty-five years ago. He wasn't interested in stamps, especially Rooshian ones—definitely. Troubles of his own.

However, after I had brought him two vodkas he staggered over to my house with me, which is only three or four doors from the gin mill. I sat him down and hollered for the kid to bring his album. So old Greg adjusts his specs, picks up the stamps and looks and looks and looks. I'd given him two black coffees and a glass of tomato juice with lemon and onion in it, so he's pretty sober by now.

"Sure made one blotch off-fer effer-i-tink," he grumbled at last. "The poz-off-fix mark smoodging oop bad, hey!"

But just the same he started reading, slowly, low-toned:

"U.S.S.R. one hunn-nert roo-bull—ai! Wow! Where they sending it—huh? Quiet—plee-eeze! What's this? Arrive in Moskva July 22, 1951. 8 in the a.m. Mailed in some . . . huh . . . harbor. Port. A seaport? Let me—look. Ugh—blots! Dem fools! Bah! Ah—L—U—N—A! Hm-m-m! Luna-port? Never heard from it. Then on the stamp it says, Rocket Mail. I don' ooder-stan' . . . crazee pee-puls—"

I jumped up. "Lunaport! Rocket mail!" I grabbed the album. "Lemme look!"

Then I yelled out. This ain't no fat-face guy smoking a cigar! It's the full moon and a rocketship!"

I dropped the album and stared.

Say, have those Reds slipped a *real* one over on us this time?

THE END



THE REFERENCE LIBRARY

BY P. SCHUYLER MILLER

THE BASIC SCIENCE-FICTION LIBRARY

My suggestion, last June, that the readers of this magazine and this department nominate their choices for two basic libraries of science-fiction books, drew a gratifying response. Letters began to come in from the west coast before I picked up my own copy of the June issue from the local newsstand.

There were forty-one letters and post cards, all told. They came from a Quebec lumber camp, from Newfoundland, from British Columbia, from England, Australia, and Paris.

They came from all corners of the United States. They came from librarians, teachers, editors, publishers, writers, and readers of all ages. Among them they proposed some fifteen hundred titles and more than three hundred different books.

There was, of course, some confusion as to what we were trying to do. You will recall that I proposed that we select two basic science-fiction collections of twenty-five books each. List "A"—for "Antiques," one reader suggested—was to be your choice of the twenty-five books which best show the growth and development of science fiction as a form of literature. List

"B"—for "Basic"—was your choice of what you consider the twenty-five "best" science-fiction books, old or new.

Since no one has produced a satisfactory definition of science fiction, it is perhaps not surprising that a good many readers proposed books which are out-and-out fantasy. It was not necessary to rule out these books: in a sample of fifty, statistically small though it is, fantasies and other off-trail books eliminated themselves.

Several people seemed to feel that certain series should be considered as one title. The most popular were the Bleiler-Dikty annual short-story collections, but others—as might have been expected—proposed E. E. Smith's "Skylark" and "Lensman" series as one title, and at least one reader plugged for a single entry for the whole Edgar Rice Burroughs "Mars" series. This scheme, logical though it may be, had to be ruled out. Fortunately Bleiler and Dikty have combined their first two volumes in a single omnibus.

One final word as to how the totals were compiled. All lists were copied off on file cards, for flexibility of handling. Then, in a few cases where several nominated books were available in one collection—principally "Seven Famous Novels by H. G. Wells," Donald Wollheim's pioneering "Portable Novels of Science," and "The Omnibus Jules Verne"—the entire vote was pooled for the collec-

tive volume. You may argue that the principle is the same as in the case of the Bleiler-Dikty books or the "Lensman" yarns: the difference is that Wells and part of Verne *are* collected between one set of covers, and the other books are not.

Two things were equally striking as the tabulation got under way: the unanimity of the readers with regard to some titles, and their lack of it where others were concerned. Forty people proposed two hundred seventy-five different books for the Basic ("B") list; thirteen people had one hundred sixty suggestions, many of them quite different from the other two hundred seventy-five, for the historic "A" library. Yet only six books were on more than half the "B" lists and seven accounted for half the "A" nominations.

The accompanying letters were as interesting as the lists. Unfortunately I could not answer all—not even all that deserved a special letter. Some of the comments I will pass on to you here or in future columns. But now to our lists—and if you still have the June issue, with my recapitulation of August Derleth's 1949 poll, get it out and compare the choices of his picked panel of "experts" with your selection.

Let's take the "B" list first. These are the books you would keep if your science-fiction collection were to be pared to twenty-five volumes. To get agreement on that much of a list we

had to go to twenty-eight titles, and down to books which had been given only nine out of a possible forty votes—roughly twenty-three per cent of the ballots.

The choice of twenty-seven out of forty voters was one of the first and still, apparently, the best of the short-story anthologies: Healy and McComas' "Adventures in Time and Space." Next, with twenty-five votes, came A. E. van Vogt's "Slan." Third stood the "Seven Famous Novels by H. G. Wells"—including various reprint titles—which had topped the Derleth list: it got twenty-four out of a possible forty votes, or around sixty per cent of unanimity. Robert Heinlein's "Man Who Sold the Moon" tallied twenty-two votes, and John Campbell's "Who Goes There?" and Groff Conklin's collection, "The Best of Science Fiction," were tied with twenty votes each. These six titles were listed by half or more of all the readers voting.

Similarly, seven books were listed by more than half of the readers who nominated titles for a list showing the development of science fiction since Plato and Lucian—both of whom were in the list. Way at the top was the H. G. Wells' "Seven Famous Novels," with fourteen votes in the adjusted list—somebody voted for both the collection and one of its seven parts. Next came A. Conan Doyle's "Lost World," Aldous Huxley's "Brave New World," and Donald Wollheim's

"Portable Novels of Science"—Taine's "Before the Dawn," Stapledon's "Odd John," Wells' "First Men in the Moon," and Lovecraft's "Shadow Out of Time"—tied with nine out of thirteen votes; Olaf Stapledon's "Last and First Men" with eight; and S. Fowler Wright's "The World Below" and "The Omnibus Jules Verne"—"From the Earth to the Moon," "Twenty Thousand Leagues Under the Seas," "Around the World in Eighty Days," and "The Blockade Runners," of which only the first two had added votes—with seven votes apiece.

This concentration of the vote among a few titles—with only H. G. Wells at the top of both lists—is in line with a comment from Melvin Korshak of Shasta Publishers, accompanying his own nominations for the "B" list:

"I realized early in my selections that it would be a lot easier to list five favorite titles—or even fifty favorites—than to list twenty-five. To list my favorite five proved very simple and was quickly done, but to narrow down all of my other choices to an arbitrary twenty proved very difficult. You see, my favorite five are 'must' books in my library, and not just in my science-fiction library. They are: '1984,' by Orwell, 'The Green Child,' by Read, 'Brave New World,' by Huxley, and the two Wells anthologies."

Now, to save time, here in tabular

form are the two lists, held as close to twenty-five titles as possible.

THE BASIC SCIENCE-FICTION LIBRARY:

1. *Raymond J. Healy & J. Francis McComas*, ADVENTURES IN TIME AND SPACE
2. *A. E. van Vogt*, SLAN
3. SEVEN FAMOUS NOVELS BY H. G. WELLS
4. *Robert A. Heinlein*, THE MAN WHO SOLD THE MOON
5. *John W. Campbell, Jr.*, WHO GOES THERE?
6. *Groff Conklin, ed.*, THE BEST OF SCIENCE FICTION
7. *Ray Bradbury*, THE MARTIAN CHRONICLES
8. *Robert A. Heinlein*, THE GREEN HILLS OF EARTH
9. *Everett Bleiler & T. E. Diky, eds.*, THE SCIENCE-FICTION OMNIBUS
10. *Ray Bradbury*, THE ILLUSTRATED MAN
11. *L. Sprague de Camp*, LEST DARKNESS FALL
12. *Donald Wollheim, ed.*, THE PORTABLE NOVELS OF SCIENCE
13. *Edward E. Smith*, GREY LENSMAN
14. *A. E. van Vogt*, THE WORLD OF A
15. *Isaac Asimov*, FOUNDATION
16. *John W. Campbell, Jr., ed.*, THE ASTOUNDING SCIENCE-FICTION ANTHOLOGY
17. *George Orwell*, 1984
18. *Eric Frank Russell*, SINISTER BARRIER
19. SHORT STORIES OF H. G. WELLS
20. *Groff Conklin, ed.*, A TREASURY OF SCIENCE FICTION
21. *Lester del Rey, . . . AND SOME WERE HUMAN*
22. *Aldous Huxley*, BRAVE NEW WORLD
23. *Isaac Asimov*, I ROBOT
24. *John W. Campbell, Jr.*, THE MOON IS HELL

25. *Robert A. Heinlein*, BEYOND THIS HORIZON
26. *A. E. van Vogt*, THE WEAPON MAKERS
27. *Jack Williamson*, THE HUMANOIDS
28. *S. Fowler Wright*, THE WORLD BELOW

I think you will agree this is a sound list, though the last six books were the selections of only twenty-two point five per cent of the readers voting. There are some odd things about it, though: for example, neither John Campbell's "Who Goes There?"—fifty per cent of the votes—nor Sprague de Camp's "Lest Darkness Fall"—thirty-three per cent—appeared *at all* in any of the thirteen historic lists, from which the following was compiled:

THE DEVELOPMENT OF SCIENCE-FICTION LIBRARY

1. SEVEN FAMOUS NOVELS BY H. G. WELLS
2. *A. Conan Doyle*, THE LOST WORLD
3. *Aldous Huxley*, BRAVE NEW WORLD
4. *Donald Wollheim, ed.*, THE PORTABLE NOVELS OF SCIENCE
5. *Olaf Stapledon*, LAST AND FIRST MEN
6. *S. Fowler Wright*, THE WORLD BELOW
7. THE OMNIBUS JULES VERNE
8. *Edward Bellamy*, LOOKING BACKWARD
9. *Hugo Gernsback*, RALPH 124 C 41 PLUS
10. *Mary Wollstoncroft Shelley*, FRANKENSTEIN
11. *A. E. van Vogt*, SLAN
12. *Groff Conklin, ed.*, THE BEST OF SCIENCE FICTION
13. *August Derleth, ed.*, BEYOND TIME AND SPACE

14. *George Orwell*, 1984
15. *Jonathan Swift*, GULLIVER'S TRAVELS
16. THE SHORT STORIES OF H. G. WELLS
17. *Ray Bradbury*, THE MARTIAN CHRONICLES
18. *Samuel Butler*, EREWHON
19. *Austin Hall & Homer Eon Flint*, THE BLIND SPOT
20. *Healy & McComas*, ADVENTURES IN TIME AND SPACE
21. *C. S. Lewis*, OUT OF THE SILENT PLANET
22. *A. Merritt*, THE MOON POOL
23. *M. P. Shiel*, THE PURPLE CLOUD

To extend this list one further division and include books which received three out of a possible thirteen votes—thirteen per cent—would add twelve more titles, including one, Merritt's "The Metal Monster," which has appeared only in a paper-backed pocket edition. The effect of the pocket books has been clear throughout the poll: many readers listed books by their paper-bound title, or listed books which have not appeared in a cloth-bound edition. It has, fortunately, not been necessary to decide whether or not to rule them out—something which would have been pretty hard to justify with titles like "The Metal Monster" or Arthur C. Clarke's "Prelude to Space," which polled an eight per cent vote in the "B" list.

Meanwhile, it may be interesting to see how individual writers rated in the two lists.

There are two ways of doing this. The simplest is to add up the votes

for all books by the writer—excluding anthologies which he has edited. However, this gives a strong advantage to the writer who has produced a large number of moderately popular books, and works against the man who has done one or two top-notchers. Instead, I have worked out for each writer a rough average of votes per book, obtained by adding all votes and dividing the total by the number of books covered.

For the Basic ("B") list, the ten top writers are:

1. Ray Bradbury	16 votes per book
2. Robert A. Heinlein	7.6
3. A. E. van Vogt	7.6
4. L. Sprague de Camp	7.5
5. John W. Campbell, Jr.	7.2
6. Henry Kuttner — Lewis Padgett	6.0
7. Isaac Asimov	5.8
8. Edward E. Smith, Ph.D.	4.6
9. H. G. Wells	4.1
10. Edgar Rice Burroughs	2.1

And for the "classics" list, the order turns out to be:

1. A. Conan Doyle	9.0 votes per book
2. S. Fowler Wright	7.0
3. Edward Bellamy	6.0
4. Hugo Gernsback	6.0
5. Mary Shelley	6.0
6. A. E. van Vogt	4.5
7. Aldous Huxley	3.7
8. H. G. Wells	3.5
9. Olaf Stapledon	3.0
10. A. Merritt	2.2

Van Vogt, more power to him, is the only "modern" to break into the ranks of the old masters, and that is done almost entirely through "Slan," which has established itself as a classic in most readers' minds. Heinlein would be twelfth in this list, with an average of 1.7 votes per book spread over four books.

THE CRYSTAL HORDE, by John Taine.
Fantasy Press, Reading, Pa. 1952.
254 pp. \$3.00

For a good many years, now, "John Taine's" book-length stories in the old *Amazing Stories Quarterly* have been almost legendary in their rarity. Fantasy Press has now brought up out of the oblivion of 1930 the best of them, originally titled "White Lily," as a companion to its earlier edition of "Seeds of Life."

This typically outrageous tale pioneered in the concept of siliceous life-forms, and did it on a scale vast enough for the grandest of grand opera, no holds barred, with a climax that seemingly wipes out half of China and reduces the Chinese to the population of Nevada. In true Taine fashion, the book opens with a collection of seemingly unrelated phenomena—a green Easter egg, two dead and boneless burros, a split rock, and a sunken transport. As the plot thickens and old earthquake-collector Jonathan Saxby fits piece to piece, the story adds such unlikely elements as the Chinese

catalyst of a Moslem holy war, a set of fathomless caverns, two Russian trouble-makers, a nest of boneless snakes, a notebook turned to rock, and a bunch of stark-naked United States Marines marooned in the middle of Kansu province. And there is White Lily, who gave her name to the original version—a heroine without a hero.

Nobody can outline the action of a Taine book without giving away too much of the mystery which is one of its chief elements. It is not mystery according to the Mystery Writers of America code—John Taine's scientific detectives delight in keeping their clues and their conclusions to themselves—but it is fun, and there are always challenging little ideas—or big ones—about the origins and possible variations on the stuff of life bobbing up and down and weaving in and out of the background. The caustic commentary on mankind and his ingrown frailties, which is another characteristic of Taine's later books, has ample opportunity to go to work here. And since the author, in his proper ego as Dr. Eric Temple Bell, research mathematician of the California Institute of Technology, has been observing humanity for close to seventy years, he is entitled to remark on what he sees.

If you've heard about "White Lily," if you've heard about John Taine, and if you don't object to the wildest of fancy, liberally laid on a solid scientific core, here will be one of the unique science-fiction books of the year.

YEAR'S BEST SCIENCE FICTION NOVELS: 1952. Edited by Everett F. Bleiler and T. E. Dikty. Frederick Fell, Inc., New York. 1952. 352 pp. \$3.50

It is no news that the names Bleiler and Dikty on the editorial masthead guarantee an anthology of taste and imagination, especially when they can draw on recent material and do not have to fall back on the picked-over carcasses of "classic" years. It is not so clear that one can reply on their blurb writers.

These five long stories are not the "best science-fiction novels" of 1951: they are not, in fact, novels. The best truly book-length serials and single-shot stories have already found their way between hard covers. These are five varied and generally good middle-length stories not long enough to become books or short enough to get into short-story collections. It's time someone gave them a break.

Three of the stories originated here: you'll remember them. "Izzard and the Membrane," by Walter M. Miller, Jr., was that thinking-machine story of the Third World War in which a cybernetics expert, tricked into treason, manages an unexpected revenge. ". . . And Then There Were None," by Eric Frank Russell, is that joyous adventure of the all-conquering Empire ship and—"MYOB." And "The Hunting Season," by Frank Robinson, is the disturbing little chase story of an offender against the State who is

hunted through our era.

The other two may be new to you, if you limit your reading to ASF. Poul Anderson's "Flight to Forever" is the lesser of the two—a rather old-fashioned tale of a time traveler who discovers that he cannot return to the past, and hunts through all future time for a greater science which will take him home. The reason why he cannot go back is a contribution to the logic of time-traveling; what happens to him is merely an old-time tour of "Forever," though well enough done.

Arthur C. Clarke's "Seeker of the Sphinx" is equally slight but a delightful mood and period piece. I kick myself for skipping the magazine version—but then it wouldn't have been new to me now. Brant, a youth in the pastoral society of a far-future Earth, sets out to visit the last, abandoned city of his race. An artist, he feels a stranger in his own world—in the world of the past—and in the world of the star-flung empire of which his Earth is a corner. Not a great deal happens, but the story is a little gem of its kind. Thanks to Messers Bleiler and Dikty for rescuing it here. And good fortune to their new "Best" series for Fell.

THE SWORD OF CONAN, by Robert E. Howard. Gnome Press, New York. 1952. 251 pp. \$2.75

The chronicles of Conan the Cimmerian, Robert E. Howard's unin-

hibited progenitor of Superman, have a place all their own in the realm of science-fantasy. To most readers they are unabashed blood-and-thunder, witch-and-warlock fantasy, yet Howard did create for them a prehistoric world with some relation to our own—the world of the “Hyborian Age” as he called it. Within that setting, no more antiscientific than some we have seen accepted quite warmly into the bosom of science fiction, Conan can be accepted.

The volumes which Gnome Press is bringing out will present the Conan adventures in the chronological sequence which Dr. John D. Clark and I worked out some years ago, and which had Howard's general approval before his death. Dr. Clark, Sprague de Camp, and the Gnomes are fitting into the “Biography of Conan” three unpublished yarns which were found among Howard's manuscripts.

“Conan the Conqueror,” with which Gnome introduced its book sequence of the Chronicles, was in point of time the last of the series, finding him as King of Aquilonia at the end of an extremely active career. The new book, “The Sword of Conan,” catches him ten or a dozen years earlier in a series of four adventures which carry him from the frontiers of Vendhya deep into the black kingdoms south of Stygia and Kush. Meanwhile he has been a hill chieftain, a pirate, and—as often before and again—a mercenary soldier. Always he meets the blackest

of magic with a sword and a mass of muscles, and comes out with a queen or a serving wench under one arm and blood on the sword.

For the bibliographical record, “The Sword of Conan” covers four or five years just about in the middle of Conan's published career. “The People of the Black Circle” finds him an Afghuli chieftain, kidnaping the Devi of Vendhya and challenging the Black Seers of Mount Yimsha. “The Slithering Shadow” finds him in a lost desert city of drugged yellow men south of the Black Kingdoms. “The Pool of the Black One” takes him to sea after a whack at piracy—some would say to America. Finally, “Red Nails” is a long tale—the last published of the chronicles—which finds him back in the mysterious southland fighting dragons and magic haunted feudists in another immeasurably ancient citadel.

One book should lie between this and “Conan the Conqueror”: rumor has it that it will include one of the three new yarns. It will take at least two books to handle Conan's earlier career as a barbarian thief and strong-arm man, plus Howard's introductory material. Gnome is using blocks of the “Biography” as an obligato, and a neat map of Conan's world, redrawn by David Kyle from Howard's own sketches, for end papers.

The Conan tales are pure entertainment of the most outrageously blood-and-thunderish sort. They would make far better scripts for the Arabian-

Nightish Technicolor daydreams which Hollywood makes at intervals than anything I have seen yet, particularly if a director could be found who could see that they were played in the blandly bloodthirsty mood of the tales but without losing Conan's blunt humor.

THE ATMOSPHERES OF THE EARTH AND PLANETS: Revised Edition. Edited by Gerard P. Kuiper. University of Chicago Press. 1952. 434 pp. 16 pl. 93 fig. \$5.50

R. S. Richardson called your attention to the original edition of this fundamental reference book two years or more ago. This second edition is almost entirely revised and is just about a "must" if you intend to write realistically about conditions on the other planets.

In form, you will recall, the book is a symposium based on the Symposium on Planetary Atmospheres held in honor of the fiftieth anniversary of Yerkes Observatory, back in 1947. The original papers were revised as of February 1948; the book appeared in 1949. The revision is up-to-date as of early 1951.

Of most interest to science-fiction readers and writers is the fact that Dr. Kuiper's own chapter, "Planetary Atmospheres and Their Origin," has been completely rewritten with special attention to conditions on Mars. You'll find this a treasury of new ideas

about the desert planet.

The chapters on "Spectra of the Night Sky and the Aurora," the program on upper-atmosphere research, formation of the Earth's atmosphere, and spectroscopy of the solar system have been substantially improved, according to the editor. Only the sections on circulation of the lower atmosphere, scattering, and the terrestrial atmosphere above 300 km needed no changes.

One other revision may bother you: the new edition is paper-bound.

CITY, by Clifford Simak. Gnome Press, New York. 1952. 224 pp. \$2.75

These are the tales the Dogs tell, about a time when there were Men . . .

You must remember the stories of the Webster family, following them and their robots and their Dogs down through ten thousand years of the future of civilization. They began to appear here in 1944; the last, "Trouble With Ants," came as recently as 1951. The saga opens with the title story, when John J. Webster (1951-2020) brings into focus the changing place of the city in human society. It was his great-great-grandson, Jerome Webster, who discovered that isolation had bred a new trait into mankind, and through that discovery lost to his people the Juwain philosophy. It is Jerome's robot—the Webster robot, Jenkins—who bridges the millennia down to the last of the tales.

In many ways the most fascinating of the episodes is the third, "Census," for here for the first time is the full cast on the stage and in action—the Websters, standing for Man—the Webster Dogs, built into a companion to Man—Joe, the Mutant—and Joe's ants. Or maybe it is the brief transition piece that follows it, in which Man and Dog find a new world opening in the bitter sleet of Jupiter. Or the stories of the cobbly worlds, which Dogs have always sensed just over there beyond the firelight . . .

I'm not sure that the critical asides

with which the editor of these legends has introduced each episode, for the edification of Dogdom, really add much to the book. They tend to flog a dead horse, or perhaps a lost Man. The Websters, their Dogs, and Jenkins don't need this kind of interpretation and moreover it seems to have been written by an uncommonly stiff-necked and conservative breed of sheepdog who can't see or fit together the clear and consistent evidence of the tales. In spite of it, this will be one of the best books of the science-fiction year.

THE END

- ➔ **Were you ever in love...with a robot?**
- ➔ **Did you ever have a house...with human instincts?**
- ➔ **Have you ever made a pet... of an affectionate whirlwind?**

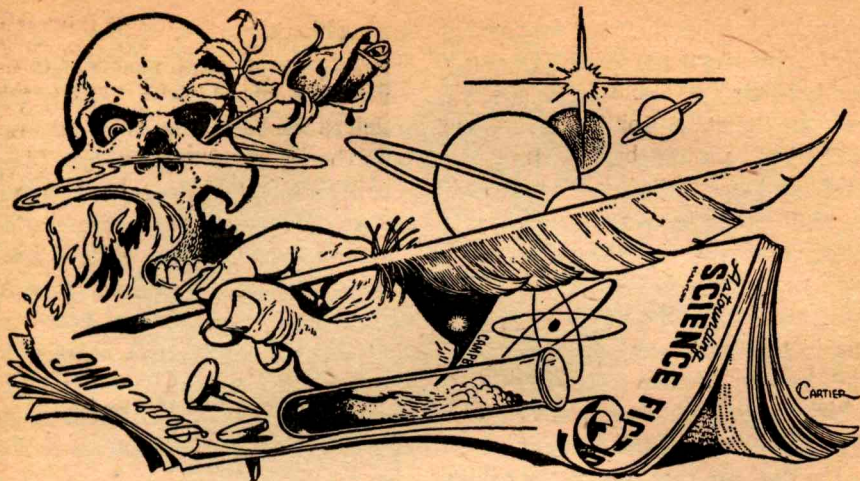
Even then, you've covered only some of the possibilities in this new and really different compilation of stories that ranges from the most serious-minded science fiction to the lightest-hearted fantasy. These stories have just three things in common: none has ever before been anthologized; they all deal with other possible forms of intelligent life; and every one is a first-rate piece of fiction.

The authors represented include Anthony Boucher, Robert A. Heinlein, Theodore Sturgeon, Murray Leinster, Lewis Padgett, and many others.

BEYOND HUMAN KEN

21 STARTLING STORIES OF SCIENCE FICTION AND FANTASY
Edited by JUDITH MERRIL. Introduction by FLETCHER PRATT.
At all bookstores, \$2.95. RANDOM HOUSE, N. Y.





BRASS TACKS

Dear Mr. Campbell:

Concerning your editorial "Aristotelian Thinking" in the May issue of ASF; it is not the validity of the yes-or-no mechanism in Aristotelianism that modern scientists and philosophers question: it is the lack of allowance within that system for the possibility that a problem may not have a solution in the yes-or-no field; it is the insistence that yes-or-no is possible and meaningful in all cases.

You wonder how a machine like the human nervous system, designed to operate "fire or not-fire" can possibly handle statements involving, say, both at once. The answer is that it can not. It is concerning this idea of a third, fourth, . . . nth possibility

that non-Aristotelianism is most frequently misunderstood.

Aristotelianism unconsciously demands a yes-or-no answer to every question encountered. To be sure, the human nervous system requires such an answer-type. It is mechanically incapable of producing or understanding any other. Bewilderment is sudden and embarrassing, however, when *neither* yes-or-no—or *both*—will do. To avoid this, non-Aristotelianism advocates simply a thorough inspection of the problem at hand *before* the actual attempt at solution to determine if a yes-or-no, "human-type" answer is possible from the problem as stated. It will *then* be examined to see if such an answer-type has mean-

ing. Only after these two things have been ascertained will the problem be "guaranteed solvable."

The idea of solvability and meaningfulness have long been of prime importance in mathematics and physics. Problem-solving consists of little more than elements arranged to form a question that we cannot solve (the Problem) and manipulations of these elements so that they form a question that we *can* solve (the Solution). Thus basically, we seldom work for solutions *directly*, but rather to place the question in a new form that will admit solution. Digital computers cannot do problems in analogue.

Since it is not possible for man to understand in any field but his neurologically imposed yes-or-no one, he must seek to devise operations that will produce answers with meaning within that field, or within ones knowledgeably isomorphic.

The Theory of Sets provides a classic example of a problem where the answer *does not* (1952) lie within the yes-or-no field. An attempt to put the arithmetic of integers on a firm foundation led to the concept of the now familiar set-of-all-sets. Russel successfully questioned the existence of such a thing by asking if it's complement, the set-of-no-sets, was a member of this set-of-all-sets. It can be easily shown that either answer, "yes" or "no," is incorrect. Here the question as asked will not yield an answer in the human-type field. For this reason, the



Graduate Now Famous Author

A. E. Van Vogt, one of the all-time greats in science fiction, is the author of five published books, scores of stories and novell-ettes. He writes: "The Palmer course is excellent and I am glad I took it. It was a milestone in my career."

How to Write

Short Stories, Mysteries, Articles, Science Fiction

For Part-time or Full-time Income, Learn at Home. Free Lesson Shows How

Would you be willing to spend a few hours a week learning to write so you may earn \$300 to \$1200 a year in addition to your regular income? Or many thousands on a full-time basis? We have helped many a former clerk, soldier, housewife, mechanic or teacher to write for money.

Earn While Learning

Many Palmer beginners earn while learning, receiving small but welcome checks for material that may be turned out quickly once you acquire the proper technique. And now it's easier to learn than you may imagine, through Palmer's unique method of training — for NOT just *one* field of writing, but for *all*: Fiction, Article, Radio and Television and special instruction in Science Fiction. Palmer Institute's home-study training is endorsed by famous authors—including Rupert Hughes, Gertrude Atherton, Ruth Comfort Mitchell, Katharine Newlin Burt, and by hundreds of successful graduates.

FREE Lesson Shows How



To learn about your opportunities, send for free sample lesson and 40-page book. No obligation; no salesman will call. Send *today*.

Palmer Institute of Authorship

Established 1917

MEMBER, NAT'L HOME STUDY COUNCIL

1680 N. Sycamore, Desk ASF-13

Hollywood 28, California



FREE

Palmer Institute of Authorship
1680 N. Sycamore, Desk ASF-13
Hollywood 28, California

Please send me free sample lesson and book, "The Art of Writing Salable Stories," telling how your home-study training helps new writers get started and experienced writers increase their income.

Mr. _____
Mrs. _____
Miss _____
Address _____

City _____ Zone _____ State _____
Please Print Clearly Veterans: check here ()

idea was held to be without meaning for humans, and discarded as not useful in mathematical proofs. Attempts to reshape this nevertheless fruitful idea still occupy mathematicians.

In the field of philosophy, aristotelianism suffers from the same handicap. Aristotelianists do not habitually examine the form of their questions to see if they *can* produce a human type answer. They continually propound themselves questions for which a yes-or-no answer is either not possible, or else meaningless. The old medieval problem of how many angels can stand on the head of a pin is an obvious example. Any answer "yes" or "no" to any stated number is without meaning. Bridgeman states in "On Understanding Science" that a concept without attending operations is without meaning. There are no operations (1952) to discover, for instance, if the answer 150 to the above question is correct or not. Questions of "first cause," "free will," and, upon close examination, most "burning questions" in philosophy are in the same class.

To recognize that only a very few problems can be made to admit human type solutions is a great step forward. It is the basic job of scientists and mathematicians to bring as many as possible nonhuman type questions into the human field.

Even Korzybski never advocated the abolition of yes-or-no. He did advocate constant guardedness against

the assumption that such human type answers are *inherent* in *all* problems. It is natural that, since we demand such answer types, we will solve, and have in the past solved, only questions admitting them. We have encountered in the past decades more and more problems lying (1952) outside our field. It must be recognized that the need is for these first to be brought into our field before we can turn our ingenuity to their actual solution. In this way, the field in which we are familiar will simultaneously grow larger.

I realize that this letter is somewhat repetitious, but these things I write cannot be repeated too often or too loudly.—Sgt. Arthur R. Walter, Camp Rucker, Alabama.

I like this statement of the case; he's clarified the point I sought to make better than I did. It seems to me that the non-Aristotelian approach seeks to force on people that idea that they must think in a way other than yes-no, while the brain is inherently incapable of any other system. As Sergeant Walter points out, the correct approach is to recognize the need for restating the problem into a form that can properly be handled by yes-no decisions.

Dir Mr. Kambul:

Ci Ogust iyu uv iur magazin is wun uv iur best iet. (NOT: Bifor we bigin, ci ridr must rialaiz cat Ai am drawiq upon ci speliq artikl cat apird in

Astowndiq Saiens Ficyun in 1946, and from a sugestyun in Bras Taks cat "Q" bi iuzd for "NG." Ai am furcer impruviq bi substitutiq "X" for "WH," xity kan bi dun, sins "KS" kan bi iuzd for "X.") Ci onli ciq cat Ai hav enicq tu kumplein ubowt is sum uv ci steitments iu meid in iur editorial.

Furst iu sei cat ci juju is konsidrd sublain bi ci Afrikan neitiv xil it is cot ridikulus bai wi xu ar "sivilaizd." Cen iu go on tu sei cat wun must bi roq! But xai, Mr. Kambul, xai? Just bikuz difrent pipł hav difrent filiğ on a subjekt, cat is no risun to cink cat wun is roq, is it?

Purhaps it is roq to ci oyr uv ci disputiq partis, but xu is tu sei xat is rili roq? Xat is ci standurd for komperisun bitwin tu totuli eiliun kulturs? Kan iyr iu or mi difain it? Uv kors not. And cat is ci risun xai wi hav difikulti in diliq wiy suty diferiq sosaitiş as ci Afrikan primitiv or ci Dobu. Uv kors cer is litl nid for komurshul rilayuns iyr.

But xat bigins to wori mi is: wil suty atituds bi taken in diliq wic kulturs from oyr wurlds? Wil pipł begin tu cink: "Cei hav suty a difrent aidia uv xat is rait and xat is roq; wun uv us must bi roq!" If suty bigins tu bi ci keis, cen waty owt! Wic suty a skism bitwin ci pipłs uv varius planets, wi wil sun hav tu waty owt for disagriments on a larger skeil. Xai cis is so, iu wil sun si. For instans: Xen iy kultur sis somciq difrent in

**Latest
books of
top S-F
authors**

—and you can read them **FREE** for a week before you decide which ones you want to keep for your permanent collection.

ISAAC ASIMOV

- (1) Pebble in the Sky \$2.50
(2) The Stars, Like Dust \$2.75

RAY BRADBURY

- (3) The Martian Chronicles \$2.75
(4) The Illustrated Man \$2.75

NELSON BOND

- (5) Lancelot Biggs: Spaceman \$2.50

HAL CLEMENT

- (6) Needle \$2.50

JOHN COLLIER

- (7) Fancies and Goodnights \$4.00

L. SPRAGUE DE CAMP

- (8) Rogue Queen \$2.75

MAX EHRlich

- (9) The Big Eye \$2.75

ROBERT A. HEINLEIN

- (10) Tomorrow the Stars (anthology) \$2.95
(11) Waldo & Magic, Inc. \$2.50
(12) The Puppet Masters \$2.75

C. M. KORNBLUTH

- (13) Takeoff \$2.75

SAM MERWIN, JR.

- (14) House of many Worlds \$2.75

FLETCHER PRATT

- (15) Double in Space \$2.75
(16) Double Jeopardy \$2.75

JOHN WYNDHAM

- (17) Day of the Triffids \$2.50

DOUBLEDAY



Mail this coupon today

**SCIENCE
FICTION**

To: Doubleday & Company, Inc.
Dept. A-12, Garden City, N. Y.

Please send me for seven days FREE examination the books whose numbers I have encircled below:

1 2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17

Within seven days I may return any books I do not wish to keep and owe nothing for them. I will send purchase price of those I keep, plus a few cents each for shipping costs, in full payment.

Name.....

Address.....

City.....Zone.....State.....

onoyr kultur, cey wil bigin tu fil superiur. Cen cey wil bigin to risent ce oyr pipul and cis wil progres until somciq is dun ubowt it. Cen wi wil rili hav a war on owr hands.

Ai biliv cat suty a steitment was onli an ovsait on iur part, Mr. Kambul, but it lids mi tu cink cat al is not xat it sims. For meibi xat iu sai is iust a riflektyun upon sumciq iu did not teik ci taim tu figur owt.

O wel, nociq has bin harmd bi al cis talk, so Ai cink Ai wil endeavor tu menyun cat Ai cot "CI FEIS UV CI ENEMI" was on uv ci best teils iu hav fiturd cis ier.

Bai ci wei, iu mei teik cis tu bi a pli for UNRIFORMD speliq. Ai laik owr speliq as it is!—JON RUL (John Ruyle) 121 Sunset Drive, Concord, California.

Anybody want to figure out whether he misspelled a word? The above material is also known as "The Proofreader's Nightmare!"

Dear Mr. Campbell,

Regarding your suggestion that a sociological engineering is needed, the highest hurdle to be cleared in that direction is the stubborn refusal on the part of humanic "scientists" to see that a rigorous representational method is an absolute necessity to acquiring exact knowledge—"exact" here meaning "quantitative and useful." There has been no thoroughgoing methodological analysis of the *proc-*

esses of "sociologizing," "anthropologizing," "psychologizing" as behavioral activities of sociologists, anthropologists, psychologists, et cetera, and hence, questions of epistemological soundness never enter the blithe and carefree hearts and heads of sociologists. Any hint of rigorous analysis, any suggestion of an adequate symbolic representational scheme, is enough to send them scampering up the wall and crying, "My subject matter is too complex!" It is, however, less complex than the universe of which it is a part; only their viewpoint—involving gross approximations—makes it complex. And physicists can make some precise statements about the universe.

The physical sciences have been able to study their methods with some degree of objectivity, thus have formulated procedural rules, theories of epistemological value, invariantive—(in mathematics)—viewpoints, adequate representational methods, and still more important: a nonformulative state-of-mind on the part of the physical scientist, nonformulative in the sense that it operates as automatically as a conditional reflex, which tells him intuitively whether an assertion is "warranted" or "not warranted." This habit-system is largely a result of the built-in "behavioral" characteristics of his representational form—i.e., in his case, mathematics. The humanic sciences have failed to devise any comparable "symbol-universe"

with extensional and invariance properties of its own, claiming bull-headedly that it can't be done or that it would lead to nothing better. They remain as innocent of rigor as an infant, as gaily unfrustrated in postulation as a medieval theology student.

Here is a statement, reworded to avoid derogatory references to a specific book, loosely serving as a "propositional function" in a freshman sociology text: "*Thus we see that while bio-structural factors influence the individual's personality, the environment exerts an even greater influence.*" Since I'm going to give only one example, I'd better point out that the book was opened randomly, and the statement was picked as the first summing-up assertion after a couple of paragraphs of extensionalizing. The statement, really two statements, one of them epistemologically worthless, even false, ignores quite happily such matters as level of abstraction, and does precisely the same thing that a mathematician would do if he treated the derivative of a variable as if it were no different from the variable itself. This can be shown by splitting the two statements apart:

"(1) The multi-component array, which we shall call 'personality,' or 'P' is a function of a collection of time-varying bio-structural variables—' x_i '—and a collection of time-varying environmental variables—' y_j '—such that we may write: $P = f(x_i, y_j)$, remembering, of course, that the sub-

What's your choice in science-fiction?

A superb collection:

The Astounding Science Fiction Anthology: 23 personal favorites selected by s-f's foremost editor, John W. Campbell, Jr. More than 250,000 words, 585 pages, by such authors as Asimov, Heinlein, Leinster, Padgett, Sturgeon, Van Vogt, and others. \$3.95

Spine-tingling adventure:

Gunner Cade, by Cyril Judd. Intrigue and danger in a future world strangely resembling the medieval past. "Surely one of the most exciting of s-f stories," says John Campbell. \$2.75

A great modern classic:

SLAN, by A. E. Van Vogt. This absorbing and brilliantly imaginative story of a mutant race, long a rare collector's item, is now available in a newly revised edition. A must for all fans. \$2.50

SEND NO MONEY

Simon and Schuster, Dept. S-7
630 Fifth Avenue, New York 20, N. Y.

Please send me:

- The Astounding S-F Anthology, \$3.95
 Gunner Cade, \$2.75 Slan, \$2.50

I will pay postman. If not delighted, I may return book(s) for refund.

Name.....

Address.....

City.....Zone.....State.....

SAVE. Enclose payment and WE pay postage. Same refund guarantee.

scripted letters represent *not* single variables, but collections—huge ones—of variables, and that P represents an abstraction which could be designated only by something like a high-order tensor, and that we do not specify anything like a precisely defined function, only assuming that one exists. (2) The partial derivative of P with respect to the y_j , evaluated at any point Q is greater than the partial derivative of P with respect to the x_i evaluated at Q ." (!)

But (2) is completely false! No such partials exist for such a multi-component abstraction as P . Yet, in saying "Environment exerts a greater influence," their existence is implied, since "influence," if it is to be meaningful at all, must mean "causing change," and there can be no simple greater-lesser quality to increments of change in a multi-component thing like P , but only greater-lesser qualities of change in specific components of P where such components could be defined by a scalar. In sociologizing, the sociologist said nothing but: "I have a feeling that if the y_j pot were stirred around a little, it would cause more stirring-around in P , than if I jostled the x_i pot a little." Or: "I have a touching feeling-of-generality about my objectified abstractions, which I objectified because I am not accustomed to rigor, but to poesy."

Isolated example. But it is characteristic of the mystical process of sociologizing as it now exists. I am

well aware that a sociologist might purple at the thought that there exists a specific function for the propositional function $P = f(x_i, y_j)$ —which is his own statement symbolically represented—but in so purpling, he merely expresses his dismay at the non-mystical task of rigorously treating as many members of x_i collections as he can, and the task of ordering them in terms of a symbol structure with extensional characteristics, and capable of behaving symbolically so as to eventually give specific answers.

He claims that the exact knowledge must come before exact representational mediums, but the claim is false. Physics and mathematics evolved together, and continue to evolve together. Any knowledge, which is knowledge, can be represented in terms of self-legislating symbol-structure in such a way that functional relationships become quickly apparent, and assertions are laid bare for epistemological evaluation. As soon as any knowledge is gained—and I suppose they *do* have some observational data—a suitable representational method should be devised to handle it. Otherwise, their generalizations and propositions will remain a collection of thumb-rules, conundrums, tricks of grammatical construction, and cracker-barrel philosophy, all stated in their sacred jargon of objectified abstractions. Up to now, they have done nothing useful except gathering observational data—clumsily, for lack

of a symbology to serve as a pointer to the pertinent—and try to generalize-by-intension without making propositional functions subject to extensional usage.

I offer this as a suggestion of *one* reason why we do not yet have that *very* desirable science of application which you mention in your editorial: sociological engineering. Epistemological self-examination by sociologists, plus the invention of an adequate representational form—not necessarily any existing mathematics—might be a step along the way.—Walter M. Miller, Jr.

Sociology and psychology both have immense stores of data to study. The problem is no longer one of accumulating facts; the problem is finding out how those facts should be fitted together. And that's not easy!

Dear Mr. Campbell:

The clatter of fifty million typewriters suddenly quieted as fifty million monkeys, scattered throughout the vast banana and coconut groves on the planet Simia—which rotates backwards in a retrograde orbit around the star Orangatango—adjusted their headphone volume controls to ameliorate the intensity of a voice screaming with decibels into their quivering ears, the voice of their emperor, Great Ape.

“Listens, youse baboons, I gotta a project for youse guys: Copy down the

CREATIVITY IN SCIENCE

Three Classic Studies Reveal Basic Laws Underlying All New Concepts & Discoveries

1. SCIENCE AND METHOD by Henri Poincaré. The psychology of scientific creation analyzed by one of the most brilliant mathematicians of all time. A study of the delicate inter-relationship of logic and intuition used in arriving at scientific concepts. Special attention to Mathematical Reasoning, The New Mechanics, Astronomy. “A powerful and original mind with a quite unrivaled scientific equipment; a masterly style, great wit, and a profound devotion to the advancement of knowledge.”—Bertrand Russell. Clothbound, \$2.50 Paperbound, \$1.25

2. SCIENCE AND HYPOTHESIS by Henri Poincaré. Similar to the above, but with emphasis on Number and Magnitude, Space, Force, Electrodynamics. 272pp. Clothbound, \$2.50 Paperbound, \$1.25

3. WHAT IS SCIENCE? by Norman Campbell. An introduction to the methodology of science. “To read this book is to be led into the laboratory of the mind of a scientist,” a physicist wrote us. “When the reader arrives on the last page he will understand the nature of science as few non-experts do. He will be armed to weigh new scientific claims.” Chapters on Science and Imagination, Newtonian Assumption, What Properties are Measurable?, etc. 192 pp. Clothbound, \$2.50 Paperbound, \$1.25

OTHER BOOK BARGAINS

4. FLATLAND by E. A. Abbott. Intro. by Hoffmann. Life in a two-dimensional world with wry political and social overtones. About 100 pp. Clothbound, \$2.25 Paperbound, \$1.00

5. RESTLESS UNIVERSE by Max Born. Lots of fascinating illustrations in this introduction to physics by an outstanding contemporary physicist. 315 pp. Clothbound, \$3.95

6. EVOLUTION OF SCIENTIFIC THOUGHT FROM NEWTON TO EINSTEIN by A. d'Abro. A 400,000-word explanation of relativity theory for non-mathematicians. Recommended highly by prominent educators & physicists. 544 pp. Ill. Clothbound, \$3.95

7. MEN OF OTHER PLANETS by Kenneth Heuer. Describes kinds of life possible on planets, moons, asteroids of outer space. Vivid report on what science knows about temperatures, climates, etc., of other worlds. 28 ill. Pub. at \$3.00. Our price: \$3.98

SUPPLIES LIMITED. MAIL COUPON TODAY TEN-DAY CASH-BACK GUARANTEE

Dover Pubs., Dept. 140, 1780 B'way, N. Y. 19
Send clothbound books whose numbers are circled: 1 2 3 4 5 6 7

Send paperbound books whose numbers are circled 1 2 3 4
Books returnable in 10 days for full cash refund.

Name

Address

I enclose \$ _____ in full payment.

FREE CATALOG • Above books, unlike most of our titles, can readily be understood by the person with no advanced math training. If you would like a catalog of ALL Dover science publications, including beginners' books as well as advanced titles for engineers, physicists, chemists, etc., put an "X" in the box at right.

following words which I just peckered out on my mill. They means something important, I'll betcha, and I want an answer toot sweet. Get me? So I'm going to allow youse bums only fifty trillion years to come up with the solution. Course you'll need a break now'n then, so at the end of each fifty million years, youse can take one million years off to peel yer banana and crack yer nuts. Get me?

"Now the two tails on our great god, The-Law-of-Probabilities, means, if anything, that (1) what looks sensible is really the bunk, and (2) what looks like the bunk is really hot stuff. Well, the following words fall in class 2; so get busy, bums, and come up with an answer. Maybe it's the formula for creating the human race, which same we been hunting for for trillions of years. Now here is what I peckered out on my mill:

"As Wrbsskovicz so lucidly postulates in his classically obscure monograph, "The Parallelaility of Interobfuscatylysm in Hydropoliticalaminous Schisms Derived from Semantic Nephritoidal Turbulentosity": "When the validity of the coefficient N equals or exceeds, or as in some exceptional cases, fails to attain the parimutuel distortion of the exponent R, the E-greater-than-e plus the square root of i equals dx, and the cybernutational disintegration is

transformed into three categorically functional logarithmic vectoroids of ellipsizic frustumation."

"What Wrbsskovicz could not anticipate, however, was the recent brilliant proof by Dr. Cursive of the periphall inconsequence of illeluctible expansivality when the gravititious pressure seeps along a hyperbolic increment of tensorium futility. The result, of course, is a vacuum of the degree of the square root of one to the twenty-first power, with digital antithesis of P (n,r) equals n! divided by (n-r)!.

"The only relief, obviously, is to reduce the high thermal defloccation from ultimate synapsis to semidirectional paralyseismic conjugality, put a little more on the plate, and take the hot dogs from the grid."

You know, John me laddy, I believe the great ape has got something by the tail there. If a fried egg adorned with green whiskers and an amputated frog leg smeared on a purple wall cracked in three places can mean or induce a feeling of reality in an alleged artist, why can't the great ape's conglomeration create spasms of rapture in the breast of an alleged scientist?—Russell H. Clark, Box 3, Harrisburg, Oregon.

It needs filterling through a turboen-cabulator.

1st Lieutenant
Lloyd L. Burke
U.S. Army
Medal of Honor



THE RED KOREAN strongpoint had stalled our attack; Lieutenant Burke saw that a breakthrough must be made. Rallying 35 men, he crept close to the enemy bunkers. He laid down a grenade barrage. Then he ran forward to an exposed knoll and opened a one-man pitched battle. He turned a light machine gun into the Red position. He caught live enemy grenades in mid-air and threw them back. Once he killed three men with his pistol. Before sunset Lieutenant Burke and 35 men had defeated 300. The lieutenant says:

"Every day men who fought in Korea are coming home. They're finding jobs—partly because they and you and I own nearly 50 billion dollars worth of Defense Bonds. For Bond savings—which protect our own families—are also building a great backlog of *national* prosperity. Reason enough for investing in Bonds—don't you agree?"

★ ★ ★

Now E Bonds earn more! 1) All Series E Bonds bought after May 1, 1952 average 3% interest, compounded semi-annually! Interest now starts after 6 months and is higher in the early years. 2) *All maturing E Bonds* automatically go on earning *after maturity*—and at the new higher interest! Today, start investing in better-paying Series E Bonds through the Payroll Savings Plan!

Peace is for the strong! For peace and prosperity
save with U.S. Defense Bonds!

The U. S. Government does not pay for this advertisement. It is donated by this publication in cooperation with the Advertising Council and the Magazine Publishers of America.





FRENCH



GERMAN



SPANISH



ITALIAN



HEBREW

Millions Speak ANOTHER LANGUAGE SO CAN YOU WITH LINGUAPHONE

World's Standard Conversational Method
The Quick, Natural, EASY Method



PORTUGUESE

These are "astounding" facts:

- YOU Bring** a foreign land right into your own home with Linguaphone—
- YOU Listen**—to native voices—for 20 delightful, adventuresome minutes a day—
- YOU Hear**—Men and women converse in their native tongue about everyday matters.
- YOU Learn** to Speak—correctly as they do. The same easy natural way you learned English.
- YOU Save**—time, work, money.
- YOU Gain**—travel, business, armed services', cultural, educational advantage.
- YOU—GO PLACES—**

Stop Wishing! Start Talking!

FRENCH
ITALIAN

SPANISH
RUSSIAN
NORWEGIAN

GERMAN
JAPANESE

any of 29 languages, available

LINGUAPHONE, 7901 Mezz., Rock. Plaza
New York 20, N. Y.

Over a million home-study students
World-wide
Educational
Endorsement



RUSSIAN



JAPANESE

WRITE FOR FREE BOOK



LINGUAPHONE INSTITUTE
7901 Mezz., Rock. Plaza, N. Y. 20, N. Y.

Send me your FREE book. I want to learn.....
language for purpose.

Name.....

Address.....

City.....Zone.....State.....

Check here if Veteran.