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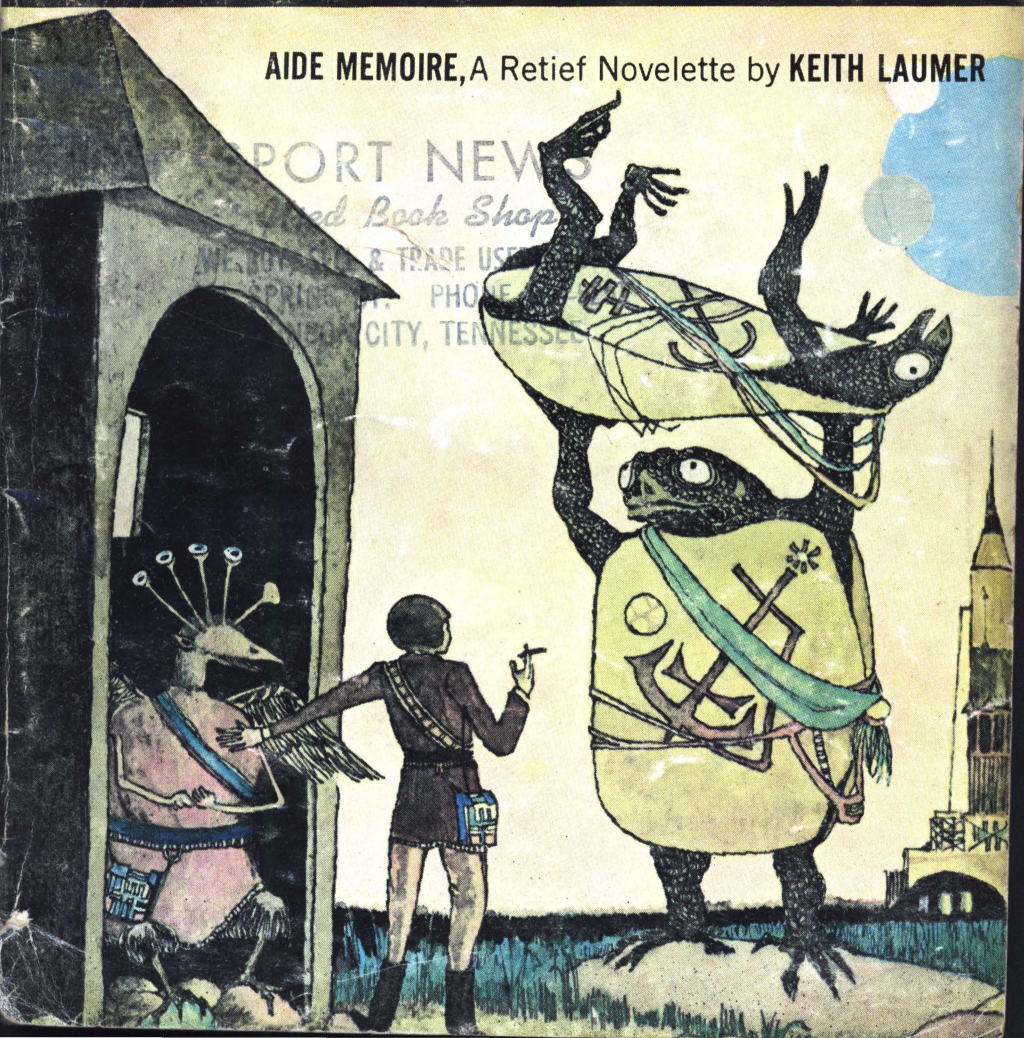
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# SCIENCE FICTION

**THE CHEMICALLY PURE WARRIORS** by Allen Kim Lang  
**UNCLE SAM'S TIME MACHINE** by Theodore Sturgeon

**AIDE MEMOIRE**, A Retief Novelette by **KEITH LAUMER**



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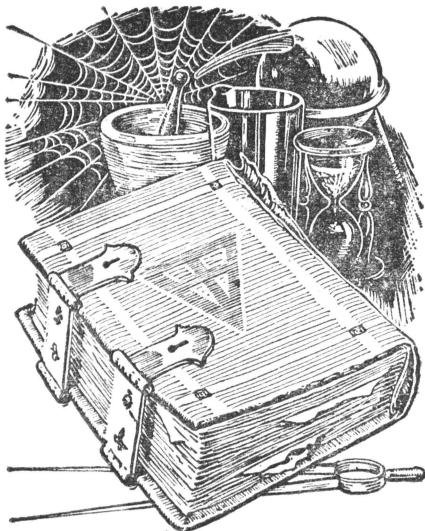
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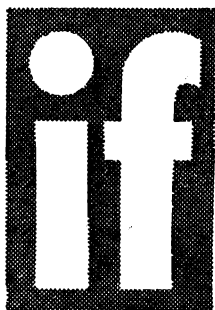
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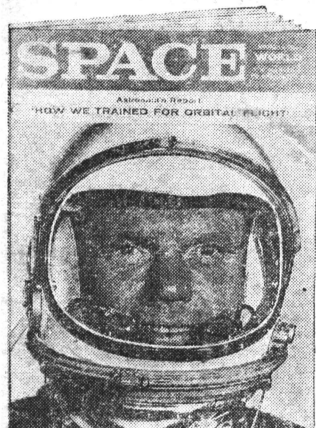
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# FROM THE EDITOR'S NOTEBOOK— HONEST!

BY THE EDITOR

**S**URELY *From The Editor's Notebook* is the corniest of all titles for an editorial page; yet we do have a notebook and we are an editor, and just this once we'll let you peek.

We wouldn't begin to let you leaf through it. It isn't that you might swipe our ideas, or that we jot down embarrassing Secrets. It's just that we'd hate to have to explain to you why we bothered to record such-and-such a thought when we honestly don't know ourselves. Some things, of course, are put down out of sheer self-defense—ideas which pop up unexpectedly and demand to be pursued at a time when duty calls elsewhere. Writing them down can often drive them underground for the time being. And some, of course, are written there specifically because we want to share them with you. It's good to dredge these out, for they often get per-

manently lost, awaiting a tie-in or a pile-on—some framework or lead-in to excuse their being immortalized on these pages. Well, the heck with a context. Take 'em as is.

All the worlds love a lover. (Title?)... Guy asks a robot, or ET, "How do you feel?" and gets a four-hour lecture on esthesia... Why do bees hum? Because they don't know the lyrics... A prize fight is in progress at the end of the world, watched only by a man alone in a fallout shelter... A completed engraving for a commemorative stamp exists in the philatelic vaults in Washington, made in spring 1914: "100 Years of Peace, 1814—1914."... No one seems to have noticed the extraordinary skill and force exhibited in the way the shepherds' part in the Nativity story is presented. The shepherds (a) *left* their sheep (b) at *night*, in order to view the

Manger. You could juice up on applied psychology for forty years and never find a more powerful way to impress the uneducated pastoral mind as to the genuine wonder of an event. The story would be told and retold, not because they comprehended the happening, but because these guys had done the unheard-of thing of leaving their flocks. It's analagous to having a surgeon leave the table in the middle of a brain operation. So there's this pastoral planet, see. And the crew dress up like natives...

Be Grown up or be Blown up... In Russian "if" and "when" translate to the same word. Hey, could this be the real gimmick behind the Berlin crisis and these incredible deadlines Khrushchev sets and then backs off? Suppose he's all the time saying "if I sign a treaty with East Germany in six months" and constantly gets translated "when I sign..."? Time travel story: smart guy buys up Cape Canaveral before base is established, sits back to cash in. His smarter buddy won't touch it: he buys the land all around it. When time comes, gov't moves in, pays (via eminent domain) for squashy unimproved relatively useless swamp country, and pays peanuts. But the other guy makes nine fortunes on motel real estate, bars and trailer parks... Chalcedony is pronounced kal

sed once... "Here, therefore, is the greatest distemper of learning: when men study words, not matters." —Francis Bacon... Genesis, Ch. 5, tells of Enoch (which means *Man*) who praised the Lord; and seems to imply that only with him did Man begin. Which in turn would imply that those who went before—Adam and Eve, Cain and Abel, were not human!... Re Conscience, see 1 Corinth. 29. (Now here's a heck of a note in the notebook! First Corinthians has only 16 chapters, Second Corinthians 13 chapters: what price Conscience?)... Make a fortune: by a piece of really nice woodland, fit it up with isolated tent sites, then install running water behind bushes, AC outlets in tree-roots, gas grates in open stone fireplaces—everything really camouflaged and concealed. Can't imagine what sort of people you'd get for clients but bet they'd pay for it... Some medic has given a name to Fear of the Bomb: Nucleomitrophobia... Seems sometimes as if the very people who were avoiding science fiction because it was specious and comic-strippy are now staying away from it because it's 'way over their heads... "It will ever remain incomprehensible that our generation, so great in its achievements of discovery, could be so low spiritually as to give up thinking." —Albert Schweitzer. **END**

# AIDE MEMOIRE

The Fustians looked like  
turtles — but they could  
move fast when they chose!

BY KEITH LAUMER

ILLUSTRATED BY BURNS

**A**CROSS the table from Retief, Ambassador Magnan rustled a stiff sheet of parchment and looked grave

"This aide memoire," he said, "was just handed to me by the Cultural Attache. It's the third on the subject this week. It refers to the matter of sponsorship of Youth groups—"

"Some youths," Retief said. "Average age, seventy-five."

"The Fustians are a long-lived people," Magnan snapped. "These matters are relative. At seventy-five, a male Fustian is at a trying age—"

"That's right. He'll try anything—in the hope it will maim somebody."

"Precisely the problem,"

Magnan said. "But the Youth Movement is the important news in today's political situation here on Fust. And sponsorship of Youth groups is a shrewd stroke on the part of the Terrestrial Embassy. At my suggestion, well nigh every member of the mission has leaped at the opportunity to score a few p— that is, cement relations with this emergent power group—the leaders of the future. You, Retief, as Councillor, are the outstanding exception."

"I'm not convinced these hoodlums need my help in organizing their rumbles," Retief said. "Now, if you have a proposal for a pest control group—"

"To the Fustians this is no



jesting matter," Magnan cut in. "This group—" he glanced at the paper—"known as the Sexual, Cultural, and Athletic Recreational Society, or SCARS for short, has been awaiting sponsorship for a matter of weeks now."

"Meaning they want someone to buy them a clubhouse, uniforms, equipment and anything else they need to complete their sexual, cultural and athletic development," Retief said.

"If we don't act promptly," Magnan said, "the Groaci Embassy may well anticipate us. They're very active here."

"That's an idea," said Retief. "Let 'em. After awhile they'll go broke instead of us."

"Nonsense. The group requires a sponsor. I can't actually order you to step forward. However..." Magnan let the sentence hang in the air. Retief raised one eyebrow.

"For a minute there," he said, "I thought you were going to make a positive statement."

**M**MAGNAN leaned back, lacing his fingers over his stomach. "I don't think you'll find a diplomat of my experience doing anything so naive," he said.

"I like the adult Fustians," said Retief. "Too bad they have to lug half a ton of horn around on their backs. I wonder if surgery would help."

"Great heavens, Retief,"

Magnan sputtered. "I'm amazed that even you would bring up a matter of such delicacy. A race's unfortunate physical characteristics are hardly a fit matter for Terrestrial curiosity."

"Well, of course your experience of the Fustian mentality is greater than mine. I've only been here a month. But it's been my experience, Mr. Ambassador, that few races are above improving on nature. Otherwise you, for example, would be tripping over your beard."

Magnan shuddered. "Please—never mention the idea to a Fustian."

Retief stood. "My own program for the day includes going over to the dockyards. There are some features of this new passenger liner the Fustians are putting together that I want to look into. With your permission, Mr. Ambassador...?"

Magnan snorted. "Your preoccupation with the trivial disturbs me, Retief. More interest in substantive matters—such as working with Youth groups—would create a far better impression."

"Before getting too involved with these groups, it might be a good idea to find out a little more about them," said Retief. "Who organizes them? There are three strong political parties here on Fust. What's the alignment of this SCARS organization?"

"You forget, these are

merely teen-agers, so to speak," Magnan said. "Politics mean nothing to them... yet."

"Then there are the Groaci. Why their passionate interest in a two-horse world like Fust? Normally they're concerned with nothing but business. But what has Fust got that they could use?"

"You may rule out the commercial aspect in this instance," said Magnan. "Fust possesses a vigorous steel-age manufacturing economy. The Groaci are barely ahead of them."

"Barely," said Retief. "Just over the line into crude atomics...like fission bombs."

Magnan shook his head, turned back to his papers. "What market exists for such devices on a world at peace? I suggest you address your attention to the less spectacular but more rewarding work of studying the social patterns of the local youth."

"I've studied them," said Retief. "And before I meet any of the local youth socially I want to get myself a good blackjack."

## II

RETIEF left the sprawling bungalow-type building that housed the chancery of the Terrestrial Embassy, swung aboard a passing flat-car and leaned back against the wooden guard rail as the heavy vehicle trundled

through the city toward the looming gantries of the shipyards.

It was a cool morning. A light breeze carried the fishy odor of Fusty dwellings across the broad cobbled avenue. A few mature Fustians lumbered heavily along in the shade of the low buildings, audibly wheezing under the burden of their immense carapaces. Among them, shell-less youths trotted briskly on scaly stub legs. The driver of the flat-car, a labor-caste Fustian with his guild colors emblazoned on his back, heaved at the tiller, swung the unwieldy conveyance through the shipyard gates, creaked to a halt.

"Thus I come to the shipyard with frightful speed," he said in Fustian. "Well I know the way of the naked-backs, who move always in haste."

Retief climbed down, handed him a coin. "You should take up professional racing," he said. "Daredevil."

He crossed the littered yard and tapped at the door of a rambling shed. Boards creaked inside. Then the door swung back.

A gnarled ancient with tarnished facial scales and a weathered carapace peered out at Retief.

"Long-may-you-sleep," said Retief. "I'd like to take a look around, if you don't mind. I understand you're laying the bedplate for your new liner today."

"May-you-d r e a m-of-the-deeps," the old fellow mumbled. He waved a stumpy arm toward a group of shell-less Fustians standing by a massive hoist. "The youths know more of bedplates than do I, but who but tend the place of papers."

"I know how you feel, old-timer," said Retief. "That sounds like the story of my life. Among your papers do you have a set of plans for the vessel? I understand it's to be a passenger liner."

The oldster nodded. He shuffled to a drawing file, rummaged, pulled out a sheaf of curled prints and spread them on the table. Retief stood silently, running a finger over the uppermost drawing, tracing lines...

"What does the naked-back here?" barked a deep voice behind Retief. He turned. A heavy-faced Fustian youth, wrapped in a mantle, stood at the open door. Beady yellow eyes set among fine scales bored into Retief.

"I came to take a look at your new liner," said Retief.

"We need no prying foreigners here," the youth snapped. His eye fell on the drawings. He hissed in sudden anger.

"Doddering hulk!" he snapped at the ancient. "May you toss in nightmares! Put by the plans!"

"My mistake," Retief said. "I didn't know this was a secret project."

AIDE MEMOIRE

THE youth hesitated. "It is not a secret project," he muttered. "Why should it be secret?"

"You tell me."

The youth worked his jaws and rocked his head from side to side in the Fusty gesture of uncertainty. "There is nothing to conceal," he said. "We merely construct a passenger liner."

"Then you don't mind if I look over the drawings," said Retief. "Who knows? Maybe some day I'll want to reserve a suite for the trip out."

The youth turned and disappeared. Retief grinned at the oldster. "Went for his big brother, I guess," he said. "I have a feeling I won't get to study these in peace here. Mind if I copy them?"

"Willingly, light-footed one," said the old Fustian. "And mine is the shame for the discourtesy of youth."

Retief took out a tiny camera, flipped a copying lens in place, leafed through the drawings, clicking the shutter.

"A plague on these youths," said the oldster, "who grow more virulent day by day."

"Why don't you elders clamp down?"

"Agile are they and we are slow of foot. And this unrest is new. Unknown in my youth was such insolence."

"The police—"

"Bah!" the ancient rumbled. "None have we worthy of the name, nor have we needed ought ere now."

"What's behind it?"

"They have found leaders. The spiv, Slock, is one. And I fear they plot mischief." He pointed to the window. "They come, and a Soft One with them."

Retief pocketed the camera, glanced out the window. A pale-featured Groaci with an ornately decorated crest stood with the youths, who eyed the hut, then started toward it.

"That's the military attache of the Groaci Embassy," Retief said. "I wonder what he and the boys are cooking up together?"

"Naught that augurs well for the dignity of Fust," the oldster rumbled. "Flee, agile one, while I engage their attentions."

"I was just leaving," Retief said. "Which way out?"

"The rear door," the Fustian gestured with a stubby member. "Rest well, stranger on these shores." He moved to the entrance.

"Same to you, pop," said Retief. "And thanks."

He eased through the narrow back entrance, waited until voices were raised at the front of the shed, then strolled off toward the gate.

**T**HE second dark of the third cycle was lightening when Retief left the Embassy technical library and crossed the corridor to his office. He flipped on a light. A note was tucked under a paperweight:

"Retief— I shall expect

your attendance at the IAS dinner at first dark of the fourth cycle. There will be a brief but, I hope, impressive Sponsorship ceremony for the SCARS group, with full press coverage, arrangements for which I have managed to complete in spite of your intransigence."

Retief snorted and glanced at his watch. Less than three hours. Just time to creep home by flat-car, dress in ceremonial uniform and creep back.

Outside he flagged a lumbering bus. He stationed himself in a corner and watched the yellow sun, Beta, rise rapidly above the low skyline. The nearby sea was at high tide now, under the pull of the major sun and the three moons, and the stiff breeze carried a mist of salt spray.

Retief turned up his collar against the dampness. In half an hour he would be perspiring under the vertical rays of a third-noon sun, but the thought failed to keep the chill off.

Two Youths clambered up on the platform, moving purposefully toward Retief. He moved off the rail, watching them, weight balanced.

"That's close enough, kids," he said. "Plenty of room on this scow. No need to crowd up."

"There are certain films," the lead Fustian muttered. His voice was unusually deep for a Youth. He was wrapped in a

eavy cloak and moved awkwardly. His adolescence was nearly at an end, Retief guessed.

"I told you once," said Retief. "Don't crowd me."

The two stepped close, slit mouths snapping in anger. Retief put out a foot, hooked it behind the scaly leg of the overaged juvenile and threw his weight against the cloaked chest. The clumsy Fustian tottered, fell heavily. Retief was past him and off the flat-car before the other Youth had completed his vain lunge toward the spot Retief had occupied. The Terrestrial waved cheerfully at the pair, hopped aboard another vehicle, watched his would-be assailants lumber down from their car, tiny heads twisted to follow his retreating figure.

So they wanted the film? Retief reflected, thumbing a cigar alight. They were a little late. He had already filed it in the Embassy vault, after running a copy for the reference files.

And a comparison of the drawings with those of the obsolete Mark XXXV battle cruiser used two hundred years earlier by the Concordiat Naval Arm showed them to be almost identical, gun emplacements and all. The term "obsolete" was a relative one. A ship which had been outmoded in the armories of the Galactic Powers could still be king of the walk in the Eastern Arm.

AIDE MEMOIRE

But how had these two known of the film? There had been no one present but himself and the old-timer—and he was willing to bet the elderly Fustian hadn't told them anything.

At least not willingly...

Retief frowned, dropped the cigar over the side, waited until the flat-car negotiated a mud-wallow, then swung down and headed for the shipyard.

THE door, hinges torn loose, had been propped loosely back in position. Retief looked around at the battered interior of the shed. The old fellow had put up a struggle.

There were deep drag-marks in the dust behind the building. Retief followed them across the yard. They disappeared under the steel door of a warehouse.

Retief glanced around. Now, at the mid-hour of the fourth cycle, the workmen were heaped along the edge of the refreshment pond, deep in their siesta. He took a multi-bladed tool from a pocket, tried various fittings in the lock. It snicked open.

He eased the door aside far enough to enter.

Heaped bales loomed before him. Snapping on the tiny lamp in the handle of the combination tool, Retief looked over the pile. One stack seemed out of alignment... and the dust had been scraped

from the floor before it. He pocketed the light, climbed up on the bales, looked over into a nest made by stacking the bundles around a clear spot. The aged Fustian lay in it, on his back, a heavy sack tied over his head.

Retief dropped down inside the ring of bales, sawed at the tough twine and pulled the sack free.

"It's me, old fellow," Retief said. "The nosy stranger. Sorry I got you into this."

The oldster threshed his gnarled legs. He rocked slightly and fell back. "A curse on the cradle that rocked their infant slumbers," he rumbled. "But place me back on my feet and I hunt down the youth, Slock, though he flee to the bottommost muck of the Sea of Torments."

"How am I going to get you out of here? Maybe I'd better get some help."

"Nay. The perfidious Youths abound here," said the old Fustian. "It would be your life."

"I doubt if they'd go that far."

"Would they not?" The Fustian stretched his neck. "Cast your light here. But for the toughness of my hide. . ."

Retief put the beam of the light on the leathery neck. A great smear of thick purplish blood welled from a ragged cut. The oldster chuckled, a sound like a seal coughing.

"Traitor, they called me. For long they sawed at me—

in vain. Then they trussed me and dumped me here. They think to return with weapons to complete the task."

"Weapons? I thought it was illegal!"

"Their evil genius, the Soft One," said the Fustian. "He would provide fuel to the Devil himself."

"The Groaci again," said Retief. "I wonder what their angle is."

"And I must confess. I told them of you, ere I knew their full intentions. Much can I tell you of their doings. But first, I pray, the block and tackle."

Retief found the hoist where the Fustian directed him, maneuvered it into position, hooked onto the edge of the carapace and hauled away. The immense Fustian rose slowly, teetered. . . then flopped on his chest.

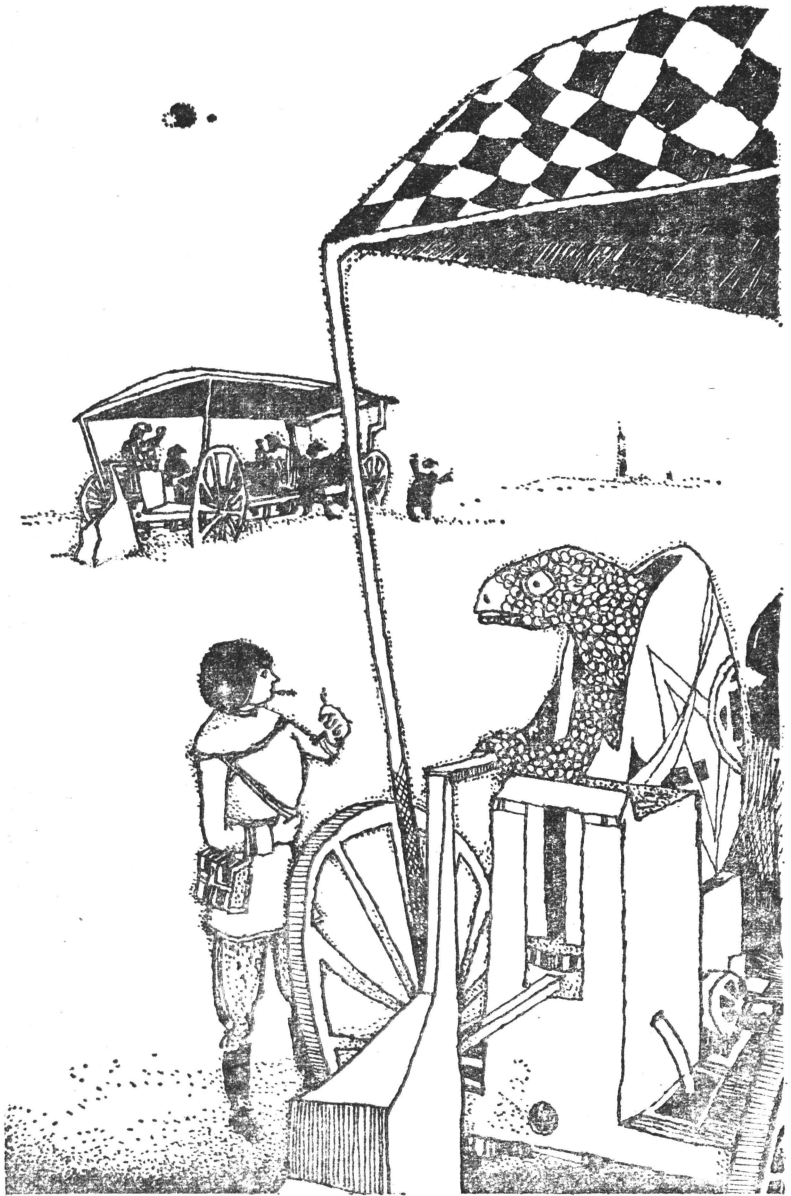
Slowly he got to his feet.

"My name is Whonk, fleet one," he said. "My cows are yours."

"Thanks. I'm Retief. I'd like to meet the girls some time. But right now, let's get out of here."

Whonk leaned his bulk against the ponderous stacks of baled kelp, bulldozed them aside. "Slow am I to anger," he said, "but implacable in my wrath. Slock, beware!"

"Hold it," said Retief suddenly. He sniffed. "What's that odor?" He flashed the light around, played it over a



dry stain on the floor. He knelt, sniffed at the spot.

"What kind of cargo was stacked here, Whonk? And where is it now?"

Whonk considered. "There were drums," he said. "Four of them, quite small, painted an evil green, the property of the Soft Ones, the Groaci. They lay here a day and a night. At full dark of the first period they came with stevedores and loaded them aboard the barge *Moss Rock*."

"The VIP boat. Who's scheduled to use it?"

"I know not. But what matters this? Let us discuss cargo movements after I have settled a score with certain Youths."

"We'd better follow this up first, Whonk. There's only one substance I know of that's transported in drums and smells like that blot on the floor. That's titanite: the hottest explosive this side of a uranium pile."

### III

BETA was setting as Retief, Whonk puffing at his heels, came up to the sentry box beside the gangway leading to the plush interior of the official luxury space barge *Moss Rock*.

"A sign of the times," said Whonk, glancing inside the empty shelter. "A guard should stand here, but I see him not. Doubtless he crept away to sleep."

"Let's go aboard and take a look around."

They entered the ship. Soft lights glowed in utter silence. A rough box stood on the floor, rollers and pry-bars beside it—a discordant note in the muted luxury of the setting. Whonk rummaged in it.

"Curious," he said. "What means this?" He held up a stained cloak of orange and green, a metal bracelet, papers.

"Orange and green," mused Retief. "Whose colors are those?"

"I know not." Whonk glanced at the arm-band. "But this is lettered." He passed the metal band to Retief.

"SCARS," Retief read. He looked at Whonk. "It seems to me I've heard the name before," he murmured. "Let's get back to the Embassy—fast."

Back on the ramp Retief heard a sound... and turned in time to duck the charge of a hulking Fustian youth who thundered past him and fetched up against the broad chest of Whonk, who locked him in a warm embrace.

"Nice catch, Whonk. Where'd he sneak out of?"

"The lout hid there by the storage bin," rumbled Whonk. The captive youth thumped fists and toes fruitlessly against the oldster's carapace.

"Hang onto him," said Retief. "He looks like the biting kind."

"No fear. Clumsy I am, yet not without strength."



"Ask him where the titanite is tucked away."

"Speak, witless grub," growled Whonk, "lest I tweak you in twain."

The youth gurgled.

"Better let up before you make a mess of him," said Retief. Whonk lifted the Youth clear of the floor, then flung him down with a thump that made the ground quiver. The younger Fustian glared up at the elder, mouth snapping.

"This one was among those who trussed me and hid me away for the killing," said Whonk. "In his repentance he will tell all to his elder."

"That's the same young squirt that tried to strike up an acquaintance with me on the bus," Retief said. "He gets around."

The youth scrambled to hands and knees, scuttled for freedom. Retief planted a foot on his dragging cloak; it ripped free. He stared at the bare back of the Fustian—

"By the Great Egg!" Whonk exclaimed, tripping the refugee as he tried to rise. "This is no Youth! His carapace has been taken from him!"

Retief looked at the scarred back. "I thought he looked a little old. But I thought—"

"This is not possible," Whonk said wonderingly. "The great nerve trunks are deeply involved. Not even the cleverest surgeon could excise the carapace and leave the patient living."

"It looks like somebody did the trick. But let's take this boy with us and get out of here. His folks may come home."

"Too late," said Whonk. Retief turned.

Three youths came from behind the sheds.

"Well," Retief said. "It looks like the SCARS are out in force tonight. Where's your pal?" he said to the advancing trio. "The sticky little bird with the eye-stalks? Back at his Embassy, leaving you suckers holding the bag, I'll bet."

"Shelter behind me, Retief," said Whonk.

"Go get 'em, old-timer." Retief stooped, picked up one of the pry-bars. "I'll jump around and distract them."

Whonk let out a whistling roar and charged for the immature Fustians. They fanned out...and one tripped, sprawled on his face. Retief whirled the metal bar he had thrust between the Fustian's legs, slammed it against the skull of another, who shook his head, turned on Retief... and bounced off the steel hull of the *Moss Rock* as Whonk took him in full charge.

Retief used the bar on another head. His third blow laid the Fustian on the pavement, oozing purple. The other two club members departed hastily, seriously dented but still mobile.

Retief leaned on his club, breathing hard. "Tough heads

these kids have got. I'm tempted to chase those two lads down, but I've got another errand to run. I don't know who the Groaci intended to blast, but I have a sneaking suspicion somebody of importance was scheduled for a boat ride in the next few hours. And three drums of titanite is enough to vaporize this tub and everyone aboard her."

"The plot is foiled," said Whonk. "But what reason did they have?"

"The Groaci are behind it. I have an idea the SCARS didn't know about this gambit."

"Which of these is the leader?" asked Whonk. He prodded a fallen Youth with a horny toe. "Arise, dreaming one."

"Never mind him, Whonk. We'll tie these two up and leave them here. I know where to find the boss."

A stolid crowd filled the low-ceilinged banquet hall. Retief scanned the tables for the pale blobs of Terrestrial faces, dwarfed by the giant armored bodies of the Fustians. Across the room Magnan fluttered a hand. Retief headed toward him. A low-pitched vibration filled the air: the rumble of subsonic Fustian music.

Retief slid into his place beside Magnan. "Sorry to be late, Mr. Ambassador."

"I'm honored that you chose to appear at all," said Magnan

coldly. He turned back to the Fustian on his left.

"Ah, yes, Mr. Minister," he said. "Charming, most charming. So joyous."

The Fustian looked at him, beady-eyed. "It is the *Lament of Hatching*," he said; "our National Dirge."

"Oh," said Magnan. "How interesting. Such a pleasing balance of instruments—"

"It is a droon solo," said the Fustian, eyeing the Terrestrial Ambassador suspiciously.

"Why don't you just admit you can't hear it," Retief whispered loudly. "And if I may interrupt a moment—"

Magnan cleared his throat. "Now that our Mr. Retief has arrived, perhaps we could rush right along to the Sponsorship ceremonies."

"This group," said Retief, leaning across Magnan, "the SCARS. How much do you know about them, Mr. Minister?"

"Nothing at all," the huge Fustian elder rumbled. "For my taste, all Youths should be kept penned with the livestock until they grow a carapace to tame their irresponsibility."

"We mustn't lose sight of the importance of channeling youthful energies," said Magnan.

"Labor gangs," said the minister. "In my youth we were indentured to the dredge-masters. I myself drew a muck sledge."

"But in these modern

times," put in Magnan, "surely it's incumbent on us to make happy these golden hours."

The minister snorted. "Last week I had a golden hour. They set upon me and pelted me with overripe stench-fruit."

"But this was merely a manifestation of normal youthful frustrations," cried Magnan. "Their essential tenderness—"

"You'd not find a tender spot on that lout yonder," the minister said, pointing with a fork at a newly arrived Youth, "if you drilled boreholes and blasted."

**“WHY**, that's our guest of honor," said Magnan, "a fine young fellow! Slop I believe his name is."

"Slock," said Retief. "Eight feet of armor-plated orneriness. And—"

Magnan rose and tapped on his glass. The Fustians winced at the, to them, supersonic vibrations. They looked at each other muttering. Magnan tapped louder. The Minister drew in his head, eyes closed. Some of the Fustians rose, tottered for the doors; the noise level rose. Magnan redoubled his efforts. The glass broke with a clatter and green wine gushed on the tablecloth.

"What in the name of the Great Egg!" the Minister muttered. He blinked, breathing deeply.

"Oh, forgive me," blurted

Magnan, dabbing at the wine.

"Too bad the glass gave out," said Retief. "In another minute you'd have cleared the hall. And then maybe I could have gotten a word in sideways. There's a matter you should know about—"

"Your attention, please," Magnan said, rising. "I see that our fine young guest has arrived, and I hope that the remainder of his committee will be along in a moment. It is my pleasure to announce that our Mr. Retief has had the good fortune to win out in the keen bidding for the pleasure of sponsoring this lovely group."

Retief tugged at Magnan's sleeve. "Don't introduce me yet," he said. "I want to appear suddenly. More dramatic, you know."

"Well," murmured Magnan, glancing down at Retief, "I'm gratified to see you entering into the spirit of the event at last." He turned his attention back to the assembled guests. "If our honored guest will join me on the rostrum...?" he said. "The gentlemen of the press may want to catch a few shots of the presentation."

Magnan stepped up on the low platform at the center of the wide room, took his place beside the robed Fustian youth and beamed at the cameras.

"How gratifying it is to take this opportunity to express once more the great pleasure we have in sponsor-

ing SCARS," he said, talking slowly for the benefit of the scribbling reporters. "We'd like to think that in our modest way we're to be a part of all that the SCARS achieve during the years ahead."

Magnan paused as a huge Fustian elder heaved his bulk up the two low steps to the rostrum, approached the guest of honor. He watched as the new comer paused behind Slock, who did not see the new arrival.

Retief pushed through the crowd, stepped up to face the Fustian youth. Slock stared at him, drew back.

"You know me, Slock," said Retief loudly. "An old fellow named Whonk told you about me, just before you tried to saw his head off, remember? It was when I came out to take a look at that battle cruiser you're building."

#### IV

WITH a bellow Slock reached for Retief—and choked off in mid-cry as the Fustian elder, Whonk, pinioned him from behind, lifting him clear of the floor.

"Glad you reporters happened along," said Retief to the gaping newsmen. "Slock here had a deal with a sharp operator from the Groaci Embassy. The Groaci were to supply the necessary hardware and Slock, as foreman at the shipyards, was to see that everything was properly in-

stalled. The next step, I assume, would have been a local take-over, followed by a little interplanetary war on Flamenco or one of the other nearby worlds...for which the Groaci would be glad to supply plenty of ammo."

Magnan found his tongue. "Are you mad, Retief?" he screeched. "This group was vouched for by the Ministry of Youth!"

"The Ministry's overdue for a purge," snapped Retief. He turned back to Slock. "I wonder if you were in on the little diversion that was planned for today. When the *Moss Rock* blew, a variety of clues were to be planted where they'd be easy to find...with SCARS written all over them. The Groaci would thus have neatly laid the whole affair squarely at the door of the Terrestrial Embassy...whose sponsorship of the SCARS had received plenty of publicity."

"The *Moss Rock*?" said Magnan. "But that was—Retief! This is idiotic. Slock himself was scheduled to go on a cruise tomorrow!"

Slock roared suddenly, twisting violently. Whonk teetered, his grip loosened... and Slock pulled free and was off the platform, butting his way through the milling oldsters on the dining room floor. Magnan watched, open-mouthed.

"The Groaci were playing a double game, as usual," Retief

said. "They intended to dispose of this fellow Slock, once he'd served their purpose."

"Well, don't stand there," yelled Magnan over the uproar. "If Slock is the ring-leader of a delinquent gang...!" He moved to give chase.

Retief grabbed his arm. "Don't jump down there! You'd have as much chance of getting through as a jack-rabbit through a threshing contest."

Ten minutes later the crowd had thinned slightly. "We can get through now," Whonk called. "This way." He lowered himself to the floor, bulled through to the exit. Flashbulbs popped. Retief and Magnan followed in Whonk's wake.

In the lounge Retief grabbed the phone, waited for the operator, gave a code letter. No reply. He tried another.

"No good," he said after a full minute had passed. "Wonder what's loose?" He slammed the phone back in its niche. "Let's grab a cab."

**I**N the street the blue sun, Alpha, peered like an arc light under a low cloud layer, casting flat shadows across the mud of the avenue. The three mounted a passing flat-car. Whonk squatted, resting the weight of his immense shell on the heavy plank flooring.

"Would that I too could

lose this burden, as has the false youth we bludgeoned aboard the *Moss Rock*," he sighed. "Soon will I be forced into retirement. Then a mere keeper of a place of papers such as I will rate no more than a slab on the public strand, with once-daily feedings. And even for a man of high position, retirement is no pleasure. A slab in the Park of Monuments is little better. A dismal outlook for one's next thousand years!"

"You two carry on to the police station," said Retief. "I want to play a hunch. But don't take too long. I may be painfully right."

"What—?" Magnan started.

"As you wish, Retief," said Whonk.

The flat-car trundled past the gate to the shipyard and Retief jumped down, headed at a run for the VIP boat. The guard post still stood vacant. The two Youths whom he and Whonk had left trussed were gone.

"That's the trouble with a peaceful world," Retief muttered. "No police protection." He stepped down from the lighted entry and took up a position behind the sentry box. Alpha rose higher, shedding a glaring blue-white light without heat. Retief shivered. Maybe he'd guessed wrong...

There was a sound in the near distance, like two elephants colliding.

Retief looked toward the

gate. His giant acquaintance, Whonk, had reappeared and was grappling with a hardly less massive opponent. A small figure became visible in the melee, scuttled for the gate. Headed off by the battling titans, he turned and made for the opposite side of the shipyard. Retief waited, jumped out and gathered in the fleeing Groaci.

"Well, Yith," he said, "how's tricks? You should pardon the expression."

"Release me, Retief!" the pale-featured alien lisped, his throat bladder pulsating in agitation. "The behemoths vie for the privilege of dismembering me out of hand!"

"I know how they feel. I'll see what I can do...for a price."

"I appeal to you," Yith whispered hoarsely. "As a fellow diplomat, a fellow alien, a fellow soft-back—"

"Why don't you appeal to Slock, as a fellow skunk?" said Retief. "Now keep quiet...and you may get out of this alive."

The heavier of the two struggling Fustians threw the other to the ground. There was another brief flurry, and then the smaller figure was on its back, helpless.

"That's Whonk, still on his feet," said Retief. "I wonder who he's caught—and why."

Whonk came toward the *Moss Rock* dragging the supine Fustian, who kicked vainly. Retief thrust Yith

down well out of sight behind the sentry box. "Better sit tight, Yith. Don't try to sneak off; I can outrun you. Stay here and I'll see what I can do." He stepped out and hailed Whonk.

Puffing like a steam engine Whonk pulled up before him. "Sleep, Retief!" He panted. "You followed a hunch; I did the same. I saw something strange in this one when we passed him on the avenue. I watched, followed him here. Look! It is Slock, strapped into a dead carapace! Now many things become clear."

RETIEF whistled. "So the Youths aren't all as young as they look. Somebody's been holding out on the rest of you Fustians!"

"The Soft One," Whonk said. "You laid him by the heels, Retief. I saw. Produce him now."

"Hold on a minute, Whonk. It won't do you any good

Whonk winked broadly. "I must take my revenge!" he to—"

roared. "I shall test the texture of the Soft One! His pulped remains will be scoured up by the ramp-washers and mailed home in bottles!"

Retief whirled at a sound, caught up with the scuttling Yith fifty feet away, hauled him back to Whonk.

"It's up to you, Whonk," he said. "I know how important ceremonial revenge is to you

Fustians. I will not interfere."

"Mercy!" Yith hissed, eye-stalks whipping in distress. "I claim diplomatic immunity!"

"No diplomat am I," rumbled Whonk. "Let me see; suppose I start with one of those obscenely active eyes—" He reached...

"I have an idea," said Retief brightly. "Do you suppose—just this once—you could forego the ceremonial revenge if Yith promised to arrange for a Groaci Surgical Mission to de-carapace you elders?"

"But," Whonk protested, "those eyes! What a pleasure to pluck them, one by one!"

"Yess," hissed Yith, "I swear it! Our most expert surgeons... platoons of them, with the finest of equipment."

"I have dreamed of how it would be to sit on this one, to feel him squash beneath my bulk..."

"Light as a whistle feather shall you dance," Yith whispered. "Shell-less shall you spring in the joy of renewed youth—"

"Maybe just one eye," said Whonk grudgingly. "That would leave him four."

"Be a sport," said Retief.

"Well."

"It's a deal then," said Retief. "Yith, on your word as a diplomat, an alien, a soft-back and a skunk, you'll set up the mission. Groaci surgical skill is an export that will net you more than armaments. It will be a whistle feather in your cap—if you bring it off. And

in return, Whonk won't sit on you. And I won't prefer charges of interference in the internal affairs of a free world."

Behind Whonk there was a movement. Slock, wriggling free of the borrowed carapace, struggled to his feet... in time for Whonk to seize him, lift him high and head for the entry to the *Moss Rock*.

"Hey," Retief called. "Where are you going?"

"I would not deny this one his reward," called Whonk. "He hoped to cruise in luxury. So be it."

"Hold on," said Retief. "That tub is loaded with titanite!"

"Stand not in my way, Retief. For this one in truth owes me a vengeance."

Retief watched as the immense Fustian bore his giant burden up the ramp and disappeared within the ship.

"I guess Whonk means business," he said to Yith, who hung in his grasp, all five eyes goggling. "And he's a little too big for me to stop."

Whonk reappeared, alone, climbed down.

"What did you do with him?" said Retief. "Tell him you were going to—"

"We had best withdraw," said Whonk. "The killing radius of the drive is fifty yards."

"You mean—"

"The controls are set for Groaci. Long-may-he-sleep."

"IT was quite a bang," said Retief. "But I guess you saw it, too."

"No, confound it," Magnan said. "When I remonstrated with Hulk, or Whelk—"

"Whonk."

"—the ruffian thrust me into an alley bound in my own cloak. I'll most certainly complain to the Minister."

"How about the surgical mission?"

"A most generous offer," said Magnan. "Frankly, I was astonished. I think perhaps we've judged the Groaci too harshly."

"I hear the Ministry of Youth has had a rough morning of it," said Retief. "And a lot of rumors are flying to the effect that Youth Groups are on the way out."

Magnan cleared his throat, shuffled papers. "I—ah—have explained to the press that last night's—ah—"

"Fiasco."

"—affair was necessary in order to place the culprits in an untenable position. Of course, as to the destruction of the VIP vessel and the presumed death of, uh, Slop."

"The Fustians understand," said Retief. "Whonk wasn't kidding about ceremonial vengeance."

"The Groaci had been guilty of gross misuse of diplomatic privilege," said Magnan. "I think that a note—or perhaps an Aide Memoire: less formal..."

"The *Moss Rock* was bound

for Groaci," said Retief. "She was already in her transit orbit when she blew. The major fragments will arrive on schedule in a month or so. It should provide quite a meteorite display. I think that should be all the *aide* the Groaci's *memoires* will need to keep their tentacles off Fust."

"But diplomatic usage—"

"Then, too, the less that's put in writing, the less they can blame you for, if anything goes wrong."

"That's true," said Magnan, lips pursed. "Now you're thinking constructively, Retief. We may make a diplomat of you yet." He smiled expansively.

"Maybe. But I refuse to let it depress me." Retief stood up. "I'm taking a few weeks off...if you have no objection, Mr. Ambassador. My pal Whonk wants to show me an island down south where the fishing is good."

"But there are some extremely important matters coming up," said Magnan. "We're planning to sponsor Senior Citizen Groups—"

"Count me out. All groups give me an itch."

"Why, what an astonishing remark, Retief! After all, we diplomats are ourselves a group."

"Uh-huh," Retief said.

Magnan sat quietly, mouth open, and watched as Retief stepped into the hall and closed the door gently behind him.

END



The aliens relished human ways.

Unfortunately, the humans relished them too!

# from gustible's planet

BY CORDWAINER SMITH

**S**HORTLY after the celebration of the four thousandth anniversary of the opening of space, Angary J. Gustible discovered Gustible's planet.

The discovery turned out to be a tragic mistake.

Gustible's planet was inhabited by highly intelligent life-forms. They had moderate telepathic powers. They immediately mind-read Angary J. Gustible's entire mind and life history, and embarrassed him very deeply by making up an opera concerning his recent divorce.

The climax of the opera portrayed his wife throwing a teacup at him. This created an unfavorable impression concerning Earth culture, and Angary J. Gustible, who held

a reserve commission as a Sub-chief of the Instrumentality, was profoundly embarrassed to find that it was not the higher realities of Earth which he had conveyed to these people, but the unpleasant intimate facts.

As negotiations proceeded, other embarrassments developed.

In physical appearance the inhabitants of Gustible's planet, who called themselves Apicians, resembled nothing more than oversize ducks, ducks four feet to four feet six in height. At their wing tips, they had developed juxtaposed thumbs. They were paddle-shaped and sufficed to feed the Apicians.

Gustible's planet matched

Earth in several respects: in the dishonesty of the inhabitants, in their enthusiasm for good food, in their instant capacity to understand the human mind. Before Gustible began to get ready to go back to Earth, he discovered that the Apicians had copied his ship. There was no use hiding this fact. They had copied it in such detail that the discovery of Gustible's planet meant the simultaneous discovery of Earth...

By the Apicians.

**T**HE implications of this tragic development did not show up until the Apicians followed him home. They had a planforming ship capable of traveling in non-space just as readily as his.

The most important feature of Gustible's planet was its singularly close match to the biochemistry of Earth. The Apicians were the first intelligent life-forms ever met by human beings who were at once capable of smelling and enjoying everything which human beings smelled and enjoyed, capable of following any human music with forthright pleasure and capable of eating and drinking everything in sight.

The very first Apicians on Earth were greeted by somewhat alarmed ambassadors who discovered that an appetite for Munich beer, Camembert cheese, tortillas and enchiladas, as well as the better

grades of chow mein, far transcended any serious cultural, political or strategic interests which the new visitors might have.

Arthur Djohn, a Lord of the Instrumentality who was acting for this particular matter, delegated an Instrumentality agent named Calvin Dredd as the chief diplomatic officer of Earth to handle the matter.

Dredd approached one Schmeckst, who seemed to be the Apician leader. The interview was an unfortunate one.

Dredd began by saying, "Your Exalted Highness, we are delighted to welcome you to Earth—"

Schmeckst said, "Are those edible?" and proceeded to eat the plastic buttons from Calvin Dredd's formal coat, even before Dredd could say though not edible they were attractive.

Schmeckst said, "Don't try to eat those, they are really not very good."

Dredd, looking at his coat sagging wide open, said, "May I offer you some food?"

Schmeckst said, "Indeed, yes."

And while Schmeckst ate an Italian dinner, a Peking dinner, a red-hot peppery Szechuanese dinner, a Japanese sukiyaki dinner, two British breakfasts, a smorgasbord and four complete servings of diplomatic-level Russian zakouska, he listened to the propositions of the Instrumentality of Earth.

THESE did not impress him. Schmeckst was intelligent despite his gross and offensive eating habits. He pointed out: "We two worlds are equal in weapons. We can't fight. Look," said he to Calvin Dredd in a threatening tone.

Calvin Dredd braced himself, as he had learned to do. Schmeckst also braced him.

For an instant Dredd did not know what had happened. Then he realized that in putting his body into a rigid and controlled posture he had played along with the low grade but manipulable telepathic powers of the visitors. He was frozen rigid till Schmeckst laughed and released him.

Schmeckst said, "You see, we are well matched. I can freeze you. Nothing short of utter desperation could get you out of it. If you try to fight us, we'll lick you. We are going to move in here and live with you. We have enough room on our planet. You can come and live with us too. We would like to hire a lot of those cooks of yours. You'll simply have to divide space with us, and that's all there is to it."

That really was all there was to it. Arthur Djohn reported back to the Lords of the Instrumentality that, for the time being, nothing could be done about the disgusting people from Gustible's planet.

They kept their greed within bounds—by their standards. A mere seventy-two thousand of them swept the earth, hitting every wine shop, dining hall, snack bar, soda bar and pleasure center in the world. They ate popcorn, alfalfa, raw fruit, live fish, birds on the wing, prepared foods, cooked and canned foods, food concentrates and assorted medicines.

Outside of an enormous capacity to hold many times what the human body could tolerate in the way of food, they showed very much the same effects as persons. Thousands of them got various local diseases, sometimes called by such undignified names as the Yangtze rapids, Delhi belly, the Roman groan-in' or the like. Other thousands became ill and had to relieve themselves in the fashion of ancient emperors. Still they came.

Nobody liked them. Nobody disliked them enough to wish a disastrous war.

Actual trade was minimal. They bought large quantities of foodstuffs, paying in rare metals. But their economy on their own planet produced very little which the world itself wanted. The cities of mankind had long since developed to a point of comfort and corruption where a relatively mono-cultural being, such as the citizens of Gustible's planet, could not make much impression. The word

"Apician" came to have unpleasant connotations of bad manners, greediness and prompt payment.

Prompt payment was considered rude in a credit society, but after all it was better than not being paid at all.

**T**HE tragedy of the relationship of the two groups came from the unfortunate picnic of the lady Ch'ao, who prided herself on having ancient Chinese blood. She decided that it would be possible to satiate Schmeckst and the other Apicians to a point at which they would be able to listen to reason. She arranged a feast which, for quality and quantity, had not been seen since previous historic times, long before the many interruptions of war, collapse and rebuilding of culture. She searched the museums of the world for recipes.

The dinner was set forth on the telescreen of the entire world. It was held in a pavilion built in the old Chinese style. A soaring dream of dry bamboo and paper walls, the festival building had a thatched roof in the true ancient fashion. Paper lanterns with real candles illuminated the scene. The fifty selected Apician guests gleamed like ancient idols. Their feathers shone in the light and they clicked their paddle-like thumbs readily as they spoke, telepathically and fluently, in any Earth lan-

guage which they happened to pick out of the heads of their hearers.

The tragedy was fire. Fire struck the pavilion, wrecked the dinner.

The lady Ch'ao was rescued by Calvin Dredd. The Apicians fled. All of them escaped, all but one. Schmeckst himself.

Schmeckst suffocated.

He let out a telepathic scream which was echoed in the living voices of all the human beings, other Apicians and animals within reach, so that the television viewers of the world caught a sudden cacophony of birds shrilling, dogs barking, cats yowling, otters screeching and one lone panda letting out a singularly high grunt. Then Schmeckst perished.

The pity of it...

The Earth leaders stood about, wondering how to solve the tragedy. On the other side of the world, the Lords of the Instrumentality watched the scene.

What they saw was amazing and horrible. Calvin Dredd, cold, disciplined agent that he was, approached the ruins of the pavilion. His face was twisted in an expression which they had difficulty in understanding. It was only after he licked his lips for the fourth time, and they saw a ribbon of drool running down his chin, that they realized he had gone mad with appetite. The lady Ch'ao followed close

behind, drawn by some remorseless force.

She was out of her mind. Her eyes gleamed. She stalked like a cat. In her left hand she held a bowl and chopsticks.

The viewers all over the world watching the screen could not understand the scene. Two alarmed and dazed Apicians followed the humans, wondering what was going to happen.

Calvin Dredd made a sudden reach. He pulled out the body of Schmeckst.

The fire had finished Schmeckst. Not a feather remained on him. And then the flash fire, because of the peculiar dryness of the bamboo and the paper and the thousands upon thousands of candles, had baked him.

The television operator had an inspiration. He turned on the smell-control.

Throughout the planet Earth, where people had gathered to watch this unexpected and singularly interesting tragedy, there swept a smell which mankind had forgotten. It was an essence of roast duck.

Beyond all imagining, it was the most delicious smell that any human being had ever smelled. Millions upon millions of human mouths watered. Throughout the world people looked away from their sets to see if there were any Apicians in the neighborhood. Just as the Lords of the Instrumentality ordered the dis-

gusting scene cut off, Calvin Dredd and the lady Ch'ao began eating the roast Apician, Schmeckst.

**W**ITHIN twenty-four hours most of the Apicians on Earth had been served, some with cranberry sauce, others baked, some fried Southern style. The serious leaders of Earth dreaded the consequences of such uncivilized conduct. Even as they wiped their lips and asked for one more duck sandwich they felt that this behavior was difficult beyond all imagination.

The blocks that the Apicians had been able to put on human action did not operate when they were applied to human beings who, looking at an Apician, went deep into the recesses of their personality and were animated by a mad hunger which transcended all civilization.

The Lords of the Instrumentality managed to round up Schmeckst's deputy and a few other Apicians and to send them back to their ship.

The soldiers watching them licked their lips. The captain tried to see if he could contrive an accident as he escorted his state visitors. Unfortunately, tripping Apicians did not break their necks, and the Apicians kept throwing violent mind-blocks at human beings in an attempt to save themselves.

One of the Apicians was so

undiplomatic as to ask for a chicken salad sandwich and almost lost a wing, raw and alive, to a soldier whose appetite had been re-stimulated by reference to food.

The Apicians went back, the few survivors.

They liked Earth well enough and Earth food was delicious, but it was a horrible place when they considered the cannibalistic human beings who lived there—so cannibalistic that they ate ducks!

The Lords of the Instrumentality were relieved to note that when the Apicians left they closed the space lane behind them.

No one quite knows how they closed it, or what defenses they had. Mankind, salivating and ashamed, did not push the pursuit hotly. Instead, people tried to make up chicken, duck, goose, Cornish hen, pigeon, sea-gull and other sandwiches to duplicate the incomparable taste of a genuine inhabitant of Gustible's planet.

None were quite authentic and people, in their right minds, were not uncivilized enough to invade another world solely for getting the inhabitants as tidbits.

The Lords of the Instrumentality were happy to report to one another and to the rest of the world at their next meeting that the Apicians had managed to close Gustible's planet altogether, had had no further interest in dealing with Earth and appeared to

possess just enough of a technological edge on human beings to stay concealed from the eyes and the appetites of men.

Save for that the Apicians were almost forgotten. A confidential secretary of the Office of Interstellar Trade was astonished when the frozen intelligences of a methane planet ordered forty thousand cases of Munich beer. He suspected them of being jobbers, not consumers. But on the instructions of his superiors he kept the matter confidential and allowed the beer to be shipped.

It undoubtedly went to Gustible's planet, but they did not offer any of their own citizens in exchange.

The matter was closed. The napkins were folded. Trade and diplomacy were at an end.

**END**

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**A**RE you intelligent? Gifted? Brilliant? *Sure* you are! At least, so says our Feature Editor. In the last issue of IF, he challenged you to prove it. Just in case you missed his provocative article **THE OTHER IF**, here's a digest of what he said.

Since s-f readers as a whole seem to have a special affinity for extrapolation, prognostication, prophecy, or whatever your word for pre-knowledge of the future is, he feels that among our readers there must be a high ability to deduce from current events certain things that will, or even *must*, happen in the near future. Since about 90 days pass between IF's closing deadline and the appearance of the magazine on the newsstands, this seems a perfect place to prove how good you are at writing *now* what will appear in the daily paper three months from now. He is not

interested in wild guesses with a billion-to-one chance of amazing everyone: any fool can predict that a Bulgarian earth satellite will land in a Wisconsin pasture but it wouldn't prove a thing if he turned out to be right. He would like to see *reasoned* forecasts in this general form:

Such-and-such has been the case.

So-and-so has now happened.

Therefore:

Thus and thus will be news when this goes to press.

There will of course be a small reward for the most accurate forecasts and acknowledgements for all. Send your entries before June 15th, 1962, to:

IF Worlds of Science Fiction  
421 Hudson St.  
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They conquered the planet and they  
owned it outright. The trouble was  
— they didn't dare set foot on it!

# THE CHEMICALLY PURE

BY ALLEN KIM LANG

FROM the head of the platoon Lieutenant Lee Hartford signaled Sergeant Felix, busy policing up stragglers at the rear, that he was taking over. Hartford tongued the volume-setting of his bitcher to "Low" and softly sing-songed to his three dozen troopers: *"Your girlfriend's just an hour away; there's a time to soldier and a time to play, Pick it HUP, HUP, HUP! 'T o o n, tain-HUT.' HUP, twop, threep, furp;*



# WARRIORS

ILLUSTRATED BY MACK

HUP, HUP; HUP, twop, threep, furp. Mondrian, pick up the cadence; you're marching like a man with a paper pelvis. *Swing 'em six to the front and three to the rear; When you sing to your Daddy, sing it loud and clear.*" Hartford turned up the volume. *"Three weeks in the woods, eating squeeze-tube beans; We'd be better off in the Fleet Marines. Sound off!"*

"ONE, TWO," boomed the voice of the Terrible Third,

sounding from the bitchers at the chests of thirty-six safety-suits. Dust slapped up from marching-boots. A flock of scarlet blabrigars settled on the road ahead, chattering and watching like small boys.

*"Sound hoff!"*

"THREE, FOUR!" The road led uphill toward Stinkerville; they were some three miles from First Regiment Barracks. Three miles from now these troopers could shed their safety-suits and helmets,

shower off three weeks of sweat, drink a beer and leer at the short-skirted, taut-haltered girls of the Service Companies.

"Who are we?" Hartford chanted.

"COMPANY C," the troopers blatted back.

The blabrigars, fluttering up from the roadway, chanted too: "Who are we? Company See. Who, we? See, see. Company See Are Wee See See." These wild birds didn't memorize human speech as well as their captive cousins; they garbled their mockeries immediately. The flock settled into the sunflowers beside the road; and were joined by a pair of wild camelopards, chewing sunflower-leaf cud as they peered at the marching Axenites. Hartford looked about, but there were no Stinkers—Kansans—in sight. These natives didn't care to watch the occupying regiment stir up their homeland's dust. "What platoon?" Hartford called, his voice magnified by the bitcher till the whole column could hear him.

"THIRD PLATOON," the men bellowed back, singing against the percussion of their boots. "'Toon, click, click, click; 'toon, click, third platoon, click," mocked the blabrigars in ragged chorus, reflecting both the words and the marching feet."

"Best platoon?"

"THIRD PLATOON!" the men shouted. They'd turned

up their bitchers to a volume the blabrigars couldn't match. Disgusted, the birds flapped their scarlet wings and flew off across the sunflower fields. "'Toon," one rear-flier chanted, "'toon, 'toon, 'toon."

"Worst platoon?" Hartford asked.

"FIRST PLATOON!" That was for the benefit of Lieutenant Piacentelli, commanding the tail-end of the Regiment, the platoon marching on either side of the lumbering Decontamination Vehicle, their safety-suit filters clogging with the dust.

"Sound off!" Hartford shouted.

"ONE, TWO!"

THAT'LL rattle the windows in Stinkerville, Hartford thought. He pitched his descant louder and higher. "Sound off!"

"THREE, FOUR!"

"Run 'er on down!"

"ONE, TWO, THREE, FOUR; ONE, TWO, THREEP—FURP!" The men of The Terrible Third were grinning through the faceplates of their helmets, rejoicing in their reputation as the loudest bunch in the Regiment, happy to help Hartford in waging his mock-feud with Lieutenant Piacentelli. They'd been classmates at the Axenite Academy; they'd been roommates in the Barracks until Pia's recent marriage to a Service Company officer.

Hartford lowered his bitch-

er to a confidential tone. "Square up, men; march tall; look rough and dirty. Show the Stinker girls what they're missing. HUP, HUP, HUP. Sling those rifles square. Mondrian, you march like you're wearing skis: HUP, twop, threep, furp!" Up and down the column came the commands of sergeants and platoon-commanders, getting their troopers in parade-trim for the march through Kansannamura: "Stinkerville."

Somewhere up front a company was singing the anthem of the Axenite troopers, "Oh, Pioneers!" The chorus of twelve dozen men, their bitchers full-up, filled the Kansan air and echoed from the walls ahead.

Stinkerville, all white-washed, with flakes of mica glittering in the sunlight, sprawled across the road that led to the Barracks. The village wall, designed to keep wild camelopards from roaming the streets and to keep the tame beasts out of the sunflower-fields, was some eight feet tall. Some Indigenous Hominid had heard the Regiment's clatter and song, for the gates of Kansannamura were open, the brick streets were clear of Stinker commerce. The village seemed deserted. A few blabrigars perched on the tiled eaves of the rammed-earth houses, making echoic comments on the sounds of the troopers, singing fleeing snatches of

"Oh, Pioneers!" A camelopard stretched its ridiculous, three-horned head at the end of its fathom of neck to peer, big-brown-eyed, at the caravan of fishbowl-headed men. Up at the head of the column the Regiment's flags were unfurled and the Regimental Band was skirling the Anthem; men were counting cadence as their boots clicked over the scrubbed bricks of Stinkerville's streets.

**B**UT no Kansan, Stinker, Indigenous Hominid, Gook or Native watched. No cowboy youngsters stared at the gunned-and-holstered men from another planet. No elders looked down their noses at the brash invaders. No mothers wiped their hands on their aprons as they thought of their sons, and the fleshly price they'd pay for freedom. No teenage girls, those patrons of parades, watched with lips half-open with apprehension and audacious thoughts about the hundreds of gift-wrapped young man marching past. This planet could have as well been named Coventry as Kansas, Hartford thought. Out the far gate of Kansannamura marched Third Platoon, Company "C," then First Platoon, flanking the Decontamination Vehicle. A villager came from the house nearest the gate and closed it. He did not look after the two columns of men winding up through the fields of sunflowers to the

high plateau where they lived.

The sight of the Barracks gave the men's steps a new swing and spring. After three weeks of sleeping in safety-suits; of breathing, sweating, drinking, eating and excreting through germ-barrier valves and tubing, the prospect of stripping off the plastic battle-dress was seductive. Inside that eight stories of windowless, doorless stone were gardens where the troopers could walk barefoot on the grass, pools whose water could splash their naked skin. In the Barracks were the three hundred Service Company women who made the big stone box home to their three thousand men.

The men of First Regiment massed on the parade-ground. While they stood At Ease, their plastic-sleeved rifles and packs growing heavier by the minute, their safety-suits staler, four of the five Service Companies marched out from the Syphon to join them. The women were suited in yellow plastic, giving rise to the gags about fool's gold. The four golden companies took up position at the center of the Regiment.

Colonel Benjamin Nef, Commander-in-Chief, Kansas, CINCK, climbed to the reviewing-stand in his command safety-suit of scarlet. Facing into the sun, the Colonel had the polarizing shield dropped over his eyes, and seemed to be wearing a black bandage.

His lower jaw beetled to give him a truculent look generally ratified by his actions. His hair glinted through the helmet like spun copper. Nef turned to his second-in-command, a lieutenant-colonel in ordinary officer's blues, and murmured instructions. The light colonel saluted, turned the controls of his bitcher to Full Loud, and addressed the troopers assembled: "Regiment..."

Down the chain-of-command came the ripple of warning:

"Battaaalion..."

"Commmanee..."

"Toooon..."

"Tain-HUT!" Fifteen hundred pairs of boots smacked together. The Adjutant held up his clipboard and read precisely: "Attention to orders:

"One. Officer of the Guard, Lieutenant Lee Hartford.

"Two. CINCK commends troopers involved in the just-completed three-week Field Exercise on not having had a single incident of compromise of sterility. Household, Maintenance and Security troopers are complimented on having maintained the integrity of the Barracks with a much-reduced force.

"Three. All male and female troopers are again cautioned that fraternization with Indigenous Hominids is an offense punishable by General Court-Martial, and that any unauthorized intercourse with the natives is prohibited."

**T**H**ERE** was of course a murmur of automatic laughter at this last bit of official double-entendre. The idea of bedding-down a Stinker wench was a favorite bit of pornographic fantasy. An airtight safety-suit, though fit with valves as functional as the drop-seat in long-johns, was no garment for romance. To undress, to appear in outdoor Kansas outside that head-to-foot sausage-casing, appealed to none of the troopers. Healthy young men and women don't entertain the thought of painful suicide.

The reporting officer about-faced, saluted Colonel Nef, about-faced again. "Present..."

"Preezent..."

"Preeezent..."

"Preeeezent..."

"**HAHMS!**" Fifteen hundred Dardick-rifles, sheathed in plastic, slapped perpendicular. The blue-clad officers, armed with pistols, touched their index fingers to their helmet-templates. The bandsmen's drums growled, the electronic horns sobbed against their mutes, and the flutes in lonely purity played the theme of "Oh, Pioneers!" For all his har-de-har-hardness, Hartford felt a sting in his eyes at this moment, as he did whenever the splendidly stage-managed ceremony of Retreat was performed. After the Anthem, much louder, the band played Retreat. The colors crept down the flagstaff,

into the reverent arms of a pair of Service Policemen.

"Oh-deph, **HAHMS!** By line-of-battalions, line-of-companies, line-of-platoons, line-of-squads, return to quarters and dismiss!" The light colonel made one last salute to CINCK, and the little ballet on the reviewing-stand was over. The troopers were now free to go in to their showers, their latrines, their suppers, and their women.

"At ease," Hartford told the Terrible Third. "Rest. Smoke if you've got 'em."

The men chuckled dutifully at the oldest joke in the service. An Axenite trooper, sealed in his germfree safety-suit and helmet, is by definition a non-smoker outside his Barracks. It would be another hour they'd be outside, since the Third was next to the last of the fifty platoons to swim home through the Syphon. While the companies on the far left flank of the Regiment were ballooning-up and peeling-off in columns-of-squads to enter the Barracks, Hartford went back to talk with Piacentelli, C.O. of First Platoon.

## II

**G**ETTING inside the Barracks was a production. The safety-suits worn outside presumably bore on their outer surfaces all the dust-borne bugs native to Kansas. To carry these bacteria into the Bar-

racks, to be inspired and ingested by Axenites—humans who'd never before had a bacterium inside their bodies—would wipe out the Regiment. Axenites are chemically pure people. They have no immunological experience. Their gamma-globulin is low, their intestinal walls are thin. They may be killed by a light salting of staphylococci, a soupcon of strep, or just a pinch of *B. subtilis*, a buglet as innocuous to "normal" humans as the dust-motes it inhabits.

The Syphon was the only entrance to the Barracks. It opened as the "Wet Gut," a ramp leading downward into liquid disinfectant which finally filled a tunnel, which ran the length of the Barracks. Each trooper, as he walked down into the disinfectant, grabbed the handholds at either side to pull himself along. Half-swimming through a turbulent portion that tugged at his suit with cavitations designed to loose the gummiest particle of bug-dirt, he came to a quieter section where he wormed along in silence, watching the man ahead of him, his stay in the antiseptic gauged to make the outside of his safety-suit as germfree as the inside.

The Wet Gut ended in an upslope. The troopers walked out, dripping, into a hallway returning in the direction from which they'd just swum. This upper arm of the Syphon was a hallway so brilliantly

lighted that the trooper had to drop his polarizing shields over his eyes. The air here in the Hot Gut was spiced with ozone from the ultra-violet sources. As each man strode down the Hot Gut at a set pace, his suit was bathed in u-v light from lamps in the ceiling, floor and walls. Just as he was washed sufficiently in the Wet Gut to kill the sturdiest-shelled spore of anthrax, the most insistently cysted protozoan, in the Hot Gut he was laved in actinic radiation powerful enough to afford a one hundred per cent safety factor against his bringing viable bug-dirt into the Barracks. At the very end of the Syphon, so that his safety-suit wouldn't stink of disinfectant or crack from ozone-rot, the trooper was blasted from all sides by a needle-shower of sterile water. Then he was home.

The platoon to the left of the Terrible Third had ballooned and was column-of-squadding toward the entrance to the Syphon. "At ease, men," Hartford said. "Increase suit-pressure one pound. Open and check reserve air-tanks. Close off filters." The men blimped a bit. Their suits sausage out around their arms and legs. Should some trooper have a pinhole in his safety-suit, the positive pressure within would keep the deadly antiseptic solution from seeping in. "Okay, men. First squad

off to the sheep-dip. Check the man ahead of you for bubbles. This is Save-Your-Buddy Week," Hartford said.

**F**AT-LEGGED and stiff, the men of Third Platoon waddled through the doorway and down the ramp into the bug-juice. One by one they went under, tugging themselves along through the turbulent area, past that; then turning over in three planes so that the man behind them could spot bubbles coming from any part of their safety-suit. A leak, of course, meant Decontamination. Decontamination meant an all-over shave, a load of antibiotics and quarantine. But it was better that one man should suffer this from time to time than that the Barracks should be sullied with a single bit of germ-laden dust.

The pale-green murk of the Wet Gut and the desert brightness of the Hot Gut were the gates of home, and welcome.

Hartford saw the Terrible Third off to their quarters, then got together with Piacentelli to go up to Officers' Country. It was good to unclasp helmets and breathe the inside air, smelling faintly green from having swept across the gardens on Level Eight. Hartford shucked off his blue suit and draped it over a refreshing unit. The device buzzed into action, washing, drying and recharging the safety-suit with fresh

filters and reserve air and water. The moment the refresher had grunted an okay to his safety-suit, Hartford carried it, clean and sweet as the day it had left the Goodyear plant on Titan, to hang it up in his locker, ready for his next foray onto bug-dirt.

Piacentelli was already under a shower. "Come on, jay-bird," he shouted. "Last one out buys the beers."

"No contest," Hartford said, setting the shower-dial. "I'm gonna stay under water for three weeks." He revolved blissfully beneath cold and angry needles.

Piacentelli, snowed in with suds and steam, yelled through the blasting water. "How'd you rate O.G. the night we get in?" he asked. "I thought you were Nasty Nef's fairhaired boy."

Hartford turned off his shower. "I got nothing better to do," he said. He stood on the drier for a minute. "I don't mind being Officer of the Guard, so long as I can eat supper off a plate instead of through a tube." He stepped into his shorts, pulled on sneakers and tugged on a tee-shirt that had stenciled over its shoulders the two half-inch gold stripes of his rank.

Pia dressed in a similar uniform. "It isn't the Messhall I miss," he said. "It's this. No number of ingenious engines, valves and relief-tubes can still my nostalgia for the sim-

ple dignity of our Barracks latrines."

**J**UNIOR Officers' Mess was set in what looked like a park, except that the bushes were tomato-plants and the trees grew apples. The tables were mostly full. "All the subalterns getting in a quick sundowner," Pia remarked, finding a two-place table yet untaken. A Service Company K.P. in the brief skirt-and-halter Class B's the women wore informally in the Barracks came to take their order. "Big cold beer for me, honey," Pia said. "The other gentleman is tonight's O.G., so he'll have a black, black coffee."

Hartford stared after the girl. "You're right, Pia," he said. "No matter how comfy Goodyear makes those safety-suits, home is best."

"You bachelors are a threat to the Table of Organization," Piacentelli said. "You'd breed us right out of house and home if you had a chance."

"Damned right," Hartford said.

"You could find a girl," Piacentelli said.

"They all itch to get married," Hartford explained. "They come out to these germey planets like they used to go to Purdue. The man-woman ratio is in their favor. And biology. Pia, I've seen bears you wouldn't glim twice on Titan turn into love-goddesses after six months here.

I'll meet some Service Company corporal, say. She'll look to me like the prettiest li'l thing since Adam's costectomy, and I'll call in at the Orderly Room to have us assigned Family Quarters. Back at Home Base, she'll turn out to be something you scare kids quiet with. She'll talk all the time, leave lipstick on drinking-glasses, or play bridge and talk about it. First thing you know, I'll be volunteering for another five years duty on bug-dirt, just for a chance to leave her behind."

"So pick up a local germ," Piacentelli suggested. "If they can't decontaminate you, they'll send you to Earth. Lots of women on Earth."

"I'd do it," Hartford said, "but I'm still more scared of microbes than lustful for a woman. Here's Dimples with our chow."

"Dimples?" Piacentelli asked as the girl came up with their tray.

"Watch her when she walks away," Hartford suggested.

"You must keep a carton of goat-glands under your bunk, Lee," Piacentelli said. "Marriage isn't all bad. I've done pretty well with Paula."

Hartford nodded. Paula Piacentelli, a lieutenant in the Service Companies, was a pretty decent sort. "Where is she now?" he asked.

"She'll be on the Status Board tonight," Piacentelli said. "You'll be in the Board Room with her. Lee, I've got



a favor to ask you. As O.G. you'll be in charge tonight."

"Paula will be in charge," Hartford said. "I'll be sleeping."

"If I go outside, though, it will need your okay as well as Paula's," Piacentelli said.

"Who's going outside with you?"

"That's the sticky bit," Piacentelli said. "I'd like to go outside alone."

**“W**ANT to run in the rain in your little bare skin?" Hartford asked. "Mix it up with a Stinker maiden? Paula wouldn't like that. Besides, you might get yourself jack-rolled by some Indigenous Hominid who doesn't like Axenites running his planet."

"I want to work on my Kansas-Standard Dictionary," Piacentelli said.

"Bug-dirt," Hartford said. "Don't tell lies."

"All right, then," Piacentelli said. "I've got an idea that might lead to the most important discovery ever made on Kansas. Paula suggested it. I want to prove it."

"Tell Nasty Nef about your idea," Hartford said, signaling the waitress for a second cup of stay-awake. "Give CINCK something clever to report when the supply ship lands, and you'll have your silver stripes before I will. Wouldn't Paula love that, though? Captain Piacentelli. I'd have to salute first."

"Nasty Nef wouldn't consider our idea," Piacentelli said. "He wouldn't be happy to know that I've been studying the Kansan language, even. A common humanity between us Axenites and the Indigenous Hominids is a notion not welcome to the world of Colonel Nef. *Brother Nef*, I might say."

Hartford leaned against the table to press a fist against Piacentelli's propped elbow. "Don't say that, Pia," he whispered. "I'm not political; I'm not interested; I don't care whether the Brotherhood even exists."

"Yes, Virginia; there is a Brotherhood," Piacentelli said. "And our Nasty Nef is a Brother."

"He's a number of things," Hartford said. "He's our CO; he's CINCK; he's an SOB. But he's our boss, and 'Brotherhood' is a dangerous word." He sipped his coffee. "Tell you what, Pia. If you want to go out and talk Gook with the Gooks, I'll fix it for you to draw picket duty tonight. The man who's got picket has been married only a month, and spent three weeks of that in a safety-suit out in the woods. I'm sure he'll relinquish to you the pleasure of a night's romp as picket officer."

"Can you do it?"

"An O.G. can do anything, during those hours when his superior officers are asleep," Hartford said.

"You're a buddy," Piacen-

telli said. "I'll give you free tutoring in Kansan for the rest of our tour."

"*Do mo arigato gazaimashita,*" Hartford said. "Thanks to your mumbling the stuff in our room, I already talk like a Stinker." He stood up. "I'm going down to the Board Room. Pick your companion for picket, and come on down when you've dressed." Hartford bowed, Kansas-style. "*Shitsurei itashimasu ga...*" he said politely, and left to assume his duties as O.G.

### III

AS one of the seventy-six male lieutenants of the Regiment, Hartford pulled O.G. about once every eleven weeks. His Terrible Third drew duty with him as Guard Platoon. All of them could expect to sleep through the night undisturbed, unless Nasty Nef held a dry-run, falling them out for a Simulated Problem. Nef was tired tonight, though; the Guard could sleep. Only the two men on picket and the handful of Service Company personnel on duty at the Status Board need stay awake tonight.

Awake or sleeping, the security of First Regiment would rest this night in the hands of Lee Hartford. It was he who bore the final responsibility for allowing no living thing to enter the Barracks except in a well-scrubbed safety-suit; for as-

suming that the air his sleeping comrades breathed was sterile and dustless; that the Syphon's poisonous bug-juice was of the proper pH and germicidity; and for checking that the whereabouts of every Axenite on Kansas was reflected on the Status Board. That these duties were complex was attested by the assignment of a Service Company officer to the Board, a woman who would watch the Board's bands of lights and meters every moment. Hartford could sleep; he was the Responsible Male. Mrs. Paula Piacentelli, 1/Lt. S.C. (Gnotobiotics Spec.), had to remain awake: she was the Knowledgeable Woman.

Hartford found Paula already at her work in the Board Room. Only a bit over five feet tall, Piacentelli's wife was concentrated woman of the most splendid sort. When Hartford had told her that Pia was taking the picket, she frowned. "I hope he doesn't plan anything foolish."

"Me? Foolish?" Piacentelli demanded from the elevator. He walked up, clammed shut in his blue safety-suit, ready to hit bug-dirt. Under one arm he carried a package sheathed in opaque plastic. Behind him, in the gray safety-suit of an enlisted trooper, was a man Hartford recognized as Corporal Bond, machine-gunner from Pia's platoon. "Lieutenant Gabriel Piacentelli report-

ing with one man, Sir and Ma'am," he said, saluting his wife and Hartford.

"At ease, Weenie-head," Hartford said. "With you and Bond on picket amidst the sunflowers, I won't sleep a wink all night." He turned to the corporal. "Did you sure-enough volunteer for this duty?" he asked.

"Yes, sir!" Bond said. "I voluntarily assumed the duty of absorbing a fifth of Lt. Piacentelli's Class-VI Scotch. The Lieutenant was kind enough to reciprocate by offering me this tour."

"He gave you Scotch?" Hartford turned to Piacentelli. "Gabe, for a jug of Scotch I'd have gone on picket with you myself. What's that you're taking outside with you? Lunch?"

"A microscope," Piacentelli said. "I'm doing a little research for Paula." His wife nodded. A gnotobiotics technician, responsible for maintaining the bacteriological security of the Barracks, she had business with microscopes.

"Want to give me the word on this romp of yours?" Hartford asked.

"Standard picket, Lee," Piacentelli said. "I'll learn a little Kansan, take care of Paula's project and tell you all about it when we get back."

**L**ET'S see your weapons." Hartford inspected Bond's Dardick-rifle and Pia-

centelli's Dardick-pistol. Both weapons were loaded, clean and wrapped up for their trip through the Wet Gut in plastic sleeves. The trucks and heavy weapons stayed outside on bug-dirt. The lighter weapons and all ammunition came back inside the Barracks with the troopers who carried them. The weapons were detail-stripped on each re-entry, irradiated with u-v and fit with fresh sleeves. As had been discovered with the first axenic animals, in the 1930's, keeping a mammal germ-free is a formidable task. When that mammal is a human being and a soldier the job is double-tough.

"Check out a jeep," Hartford said. "Report each half-hour. Don't shoot any Stinkers...sorry, I mean Indigenous Hominids. Try not to hit a camelopard with the jeep; we're low on replacement parts. In fact, be careful. Okay, Pia?"

"Done and done, Exalted One."

Hartford dropped his voice. "I'd feel easier in my mind if I knew what's so important as to require your desertion of our mutual womb tonight, Pia."

"Language study, you might say," Piacentelli replied.

"*Ha! So desa ka?*" Hartford replied. "That's so much bug-dirt, and you know it."

"*Ha!*" Piacentelli said. "See you at dawn. Take care of my wife, buddy."

"Aren't you going to kiss her good night?" Hartford asked.

Pia grinned through his clammed-shut helmet and clomped to the elevator with Bond. They were en route to the Hot Gut and the Wet Gut, the twisting hallway from the sterile First Regiment Barracks to the living night of Kansas.

Hartford turned.

Paula Piacentelli wore the short skirt, knee-hose and short-sleeved blouse of Pioneer green that was the Class B uniform for females inside the Barracks. She looked, Hartford thought, remarkably delectable; and he again congratulated his friend on his luck in getting her. He returned his attention to the Status Board, which Paula was conning. Two red lights flickered on above the ground-floor diagram of the Barracks, indicating that the two men of the picket had entered the Hot Gut. A moment later these lights blinked off, and two lighted over the diagram of the Wet Gut. Piacentelli and Bond were swimming now, towing their weapons in ballooning plastic sleeves. Sterile, on their way out into a filthy world, these two men were the outpost that would protect through the night their hundreds of brothers and sisters sleeping safe *in utero*. Freud, thou shouldst have lived this hour! Hartford mused.

PIACENTELLI turned the Pignition key of the jeep he'd chosen. With the starting cough of the engine, one of the rank of TV screens over the Status Board lighted. The camera eye was looking out the rear-view mirror of the jeep, and picked up Pia's helmeted head and the shoulder of his companion. "We're off to see the Wizard, the Wonderful Wizard of Oz!" Piacentelli sang.

His wife spoke into the microphone before her. "Don't do anything foolish, Lieutenant," she said. "And remember, all transmissions are recorded and are audited, at random, by the Base Commander."

"Transmission received, receiver contrite," Piacentelli reported back. "Okay, Paula-Darling. From now on till Bond and I swim home, we'll be as military as GI soap." He flicked the TV monitor around to look out the windshield and started the jeep down the road toward Stinkerville. The duty of the picket was to chug around outside at random, hitting all the crossroads, settlements and high spots of the countryside near the Barracks; to interview late-riding Indigenous Homioids and inquire their business being out; to conduct such searches of Stinker homes and hideaways as might seem useful to the occupying Axenites; and to remain at all times in contact with the offi-

cers on duty at the Status Board.

As the picket got underway, Hartford went down to the Terrible Third's area to check quickly through the two-man apartments. Knock on the door; "As you were, Troopers." A brisk inspection of two safety-suits, gaping beside their owners' bunks like firemen's boot-sheathed pants. The men were quiet. Guard-duty meant that any socializing with Service Company troopers was impossible for a night, and militated against any intake of alcoholic beverage. It was a bore, especially after three dry and womanless weeks in the field. Hartford visited his Platoon Sergeant last: "Sergeant Felix, could you have our bunch standing on bug-dirt ten minutes after I blew the whistle? Very well, then. Good night, Felix."

Having demonstrated to his troopers that he was suffering the same strictures as they, Hartford went back to the O.G. cubicle in the Board Room. He checked his own safety-suit, his plastic-packaged Dardick-pistol, said good night to Paula Piacentelli and lay down to begin his first night's sleep outside a safety-suit in three weeks.

But sleep didn't come easily.

There was the murmur from the Board Room; Piacentelli's half-hourly reports. "Nothing to report, Paula. I'm at Road Junction (41-17). No I.H. ac-

tivity. No excitement at all."

"Continue random patrol, Lieutenant."

"Yes, Dear. I'm going to run down to Kansannamura (42-19) for my next call-in."

"Carry on, Lieutenant."

Pia was in the best possible hands with Paula on duty, Hartford mused. The Status Board was really a woman's job. The girls of the Service Companies were the housekeepers of the Barracks, the guardians of the Regimental lares and penates. Paula, for example, had as her primary duty gnotobiotic control: the maintenance of the whole germ-free system of the Barracks, from the Hot-&Wet Guts to safety-suit inspection and the upkeep of the Decontamination Vehicles. Behind the women on Board-duty, however, was always at least one male, combat-trained Officer of the Guard, ready (once awakened and briefed by the female help) to take armed men into the field.

But meanwhile, Hartford wanted to sleep.

**H**ALF an hour passed, and at its end Pia made his report: "Picket reporting. Paula. I'm going into the village. Corporal Bond will remain with the jeep, and will keep the transmitter open till I get back. Okay?"

"Be careful, Lieutenant," Paula Piacentelli said, combining affection with military formality.

Hartford, deciding that sleep was impossible, got up and cold-showered. Dressing in fresh Class B's, he walked out to join Paula at the Status Board. The TV screen showed Bond, the sheathed Dardick-rifle slung over his shoulder, pacing back and forth in front of the jeep, glancing from time to time toward the walls of Kansannamura, white in the light of the skyful of stars. He was nervous, evidently aware of the fact that Kansas was largely unexplored, her potential for midnight mayhem untested. Bond spoke across his shoulder. "The lieutenant has been gone for a quarter hour, Ma'am," he said. "Do you want me to go in and ask him to come out?"

"Wait another quarter-hour, Corporal," Paula said. She explained to Hartford, "What he's got to do may take a little time." They watched the screen. Bond climbed back into the jeep, where he sat with his rifle between his knees, sweeping his attention around him, at the village, at the road behind, at the sunflower-fields, where the blossoms were bleached white and the leaves enameled black by starlight.

With Paula's agreement, Hartford pressed the microphone-switch to talk with Bond. "Have you tried to tap Piacentelli on his suit-receiver, Corporal?"

"Yes, sir," Bond said. "First thing. No answer."

"Turn your bitcher full up, then," Hartford said. "Tell Lieutenant Piacentelli that the O.G. wants him out on the road within five minutes."

"Done and done, sir." Bond tongued the bitcher's controls to Full Volume and repeated the message. Echoes bounced back from the walls of Stinkerville and lost themselves in the tangle of sunflowers.

No one answered.

The village seemed as much asleep as it had been before Bond's bellow. The Kansans were never hasty to volunteer response to Axenites; they knew that troopers meant trouble.

"Piacentelli is busy at something," Hartford said, as much to reassure himself as Pia's wife. "I think I'll go out and have a look." He spoke to Bond: "Get out of the jeep, but stay close to it. Report any haps immediately. Watch for lights, listen for small-arms fire."

"Done and done, sir."

Hartford phoned Felix, his platoon sergeant. "Report to the Board Room to sub for me," he said. "Wake the Platoon Guide and tell him to stand ready to fall the Guard out, but not to wake anyone else yet. This is probably a nothing, Felix; Lt. Piacentelli just went for a walk in Stinkerville."

**T**HE Command Light, top in the tier of all the hierarchy of red-yellow-green-white

Status-Board indicators, flashed alive.

"A nothing?" Nasty Nef's voice demanded. "What sort of talk is that, Lieutenant? If I've been properly interpreting the past five minutes' transmissions, we've got an Axenite officer stranded in the middle of a Stinker village. This, Mister, is not a nothing. Call out the Guard. Prepare to join me in a Stinkerville shake down. Those Gooks got to learn they can't play fast-and-easy with Axenite troopers."

"Done and done, sir!" Hartford snapped. He toggled the phone to get Felix back. "Felix, fall the boys out beside the Syphon. We've got the Old Man hitting bug-dirt with us, so look sharp."

"The colonel's going out with us?" Felix asked.

"Yes. There must be more to this situation than meets the company-grade eye," Hartford said. "Diaper-up our darlings and stand by in the Hot Gut, Felix."

"Done and done!"

Twenty seconds later a figure in Santa Claus red came clashing into the room. Hartford, half into his blue safety-suit, came to a clumsy attention. The newcomer, his helmet clammed shut all ready for contamination, bellowed, "Get with it, Mister!"

"Yes, sir." Hartford fit himself into the suit, a sort of cockpit, a congeries of valves, gauges, counters and vetters.

In a moment he'd sealed himself in the sterile suit, checked his air-filters and air reserve. "The Guard is assembled in the Hot Gut, sir, ready to take the field."

"Dam' well better be," Nef said. "Lead off, Mister." He turned to Paula Piacentelli. "Send a Decontamination Vehicle after us, Lieutenant. No telling what those Stinker devils have cooked up with Piacentelli." Back to Hartford: "You're in command of the Guard, I'll observe and offer suggestions."

"Tain-HUT!" Platoon Sergeant Felix saluted the scarlet-clad colonel and the blue-clad lieutenant as they stepped from the elevator into the electric atmosphere of the Hot Gut. The Guard snapped to, their plastic-packaged Dardick-rifles at order arms.

"Take 'em out, Felix," Hartford said. "Two personnel carriers, a .50-caliber m.g.-mounted jeep fore and aft. You and the colonel take the rear jeep; I'll lead. Have the men unbag their weapons the instant we're outside. Any questions?"

"No, sir."

"Move out," Hartford said.

#### IV

THE squads peeled off and double-timed down the Hot Gut. Man by man they dipped into the Wet Gut for their swim outside. They'd been drilled for speed in exit-





ing. If the Regiment were needed outside, the Syphon could become a literal bottleneck. As the last squad splashed into the antiseptic solution, Hartford turned to Colonel Nef. "Sir, I have a question," He said.

"Hurry it up, Mister."

"Isn't this a bit extreme, sir? We're going out to take one man out of a primitive village where we're not even sure he's in trouble. And we're carrying enough firepower to blast into an armed city."

"I don't trust the Gooks," the colonel said. "Their bucolic way of life may be a fraud, designed to lull us into complacency. Tonight we may discover that they're plotting the overthrow of the Garrison, using weapons and tactics they've kept secret. I hope such is the case, Lieutenant. It would give us adequate cause to wipe the Stinkers off Kansas and make this as clean a world as Titan."

"Sir..."

"Move, Mister," Nef said. "Piacentelli has been in Stinkerville for fifty minutes. Let's get him out."

The four trucks roared down the plateau toward the Indigenous Hominid hamlet at its foot. When the first Axenite Pioneers landed on the planet, bacteria-free as all men in space had to be, they'd set up camp near the spot where First Regiment Barracks now stood. They saw the fields of sunflowers, grown for food

and cloth, and heard the natives call the nearest village Kansannamura. From that time on, this world was Kansas.

There was no moonlight—Kansas has no moon—but the headlamps of the four vehicles were wasted against the bright ribbon of road, lighted as it was by the sheet of stars that melted together in a metallic ceiling over the night. The men sat with their rifles between their knees, the plastic sleeves stripped off. Each of these Dardick-rifles could fire a solid stream of death. Each round of ammunition was fitted with a matrix that served as chamber, cartridge and the first fraction-of-an-inch of barrel. A magazine of forty such rounds could be hosed through the rifle in half a second. The troopers sped downhill, through sunflower fields black and silver in the light of the stars.

THE personnel carriers and the jeeps scuffed to a halt by the village gate, the men scattering like shrapnel, according to the book. Colonel Nef spoke to Hartford on the command-band. "Move in, Lieutenant. Bring out Piacentelli. Any Stinker resistance is to be treated as open rebellion."

"Yes, sir." Hartford spoke to his men: "First squad, lead scout, forward to the gate."

The scout, his plastic safety-suit and the glass of his

helmet glinting highlights, scuttled to the gate. He kicked the gate open—Piacentelli had evidently left it ajar—and entered, rifle-first. "First squad, follow me in column. Open to Line-of-Skirmishers in the square. Second squad, follow in the same manner. Third squad, maintain your interval and stand ready."

Hartford ran, pistol in hand, through the open gate. It was like charging some Roman ruin unpeopled for three centuries, like a field exercise with boulders marking obstacles to be won. There was no sign of natives. Their shopboards hung bearing the picture-script the Kansans used, quiet as the marbles in a cemetery. Hartford directed first squad in a sweep through the alleys, searching for Piacentelli. Second squad clattered through the gate behind them, took up a skirmish line, and moved in to cover the square as first squad disappeared into the doorways and alleys of Stinkerville.

The village, except for its beasts, might have been deserted. These animals, camelopards used for riding and to carry burdens, woke and gazed serenely down at the interrupters of their vegetable dreams, blinking their liquid half-shuttered eyes. Boots clattered on cobblestones. The houses were unlighted. "Throw on your i-r," Hartford ordered. As they moved into the dark, narrow ways, the

men beamed infra-red light from the projectors on their safety-suits, the bounced-back, invisible light being transduced to black-and-green chiaroscuro by passage through the stereatronic goggles dropped inside their helmets.

"Turn the Stinkers out, Mister," Nef command-banded.

"Into the houses," Hartford signalled. Ahead, a boot slammed wood, and hinges burst. To the restless night sounds of the camelopards in their stalls, the click of military boots on brick, and the rustle of rifles against safety-suits was added the whispering of families rousing from their beds. Hand in hand from father to mother to elder brother, down the scale to the youngest, the Kansans stumbled out into their little courtyards. "*Ano hito wa dare desu ka?*" "*Abunai yo!*" "*Shikata ga nai...*"

"ANY sign of Piacentelli yet?" Nef demanded.

"Not yet, sir," Hartford signalled.

"Feed a candle into every building, Lieutenant. We'll get these Gooks in the open and interrogate till we find our man."

"Done and done, sir," Hartford said, stepping out of the way of a little girl fleeing toward the village square with an even littler girl strapped to a pack-board on her back. He passed on the order. "Fire in

ten seconds, nine, eight... now!" Each man of first squad tossed a Lake Erie Lightning Universal Gas Candle through the window nearest him. A little over a second later a dozen grenades spit out a cloud of smoke with a hiss like a bursting fire-hose, and the outer air was filled with an eye-stinging gas. The Indigenous Hom-inids spilled out of their homes in all directions now: coughing, choking, children rubbing the smoke particles into their half-wakened eyes. Two camelopards, blinded like their masters, blundered into the square, tears streaming from their reproachful eyes, twelve feet above the pavement. Second squad's men danced clear of the beasts and hallooed them out the gate.

Somewhere back in an alley a first-squad trooper tapped his trigger, jetting steel against overhanging roof-tiles. "Nail that shot, Mister!" Nef demanded.

Hartford heard the squad leader: "It's Lieutenant Piacentelli, sir. He's here."

"Bring him out, man; bring him out!" Nef's excited voice triggered a new string of rifle bursts.

Hartford tongued his bitcher full-volume: "Cease fire, you idiots! Piacentelli, head for the square."

"Stop it, for God's sake, stop it!" Piacentelli shouted, his unamplified voice coming from a smoke-filled alley. Hartford plunged into the

dark smoke—a tear-gas grenade had set afire some of the sun-flower-paper room dividers, and kindled with them a row of wooden houses—and shouted for Piacentelli. A blabrigar, as blind in the smoke as the men, blundered against Hartford's helmet. "Yuke! Yuke!" the bird screamed, grabbing hold of the transceiver-antenna that horned up from the helmet. Hartford grabbed the blabrigar and tossed it up above the melee. He heard it flying in circles, searching for its Stinker owners, chanting the last words they'd said to it: "Yuke! Yuke! Yuke!"— "Go!"

**EVERYTHING** was burning. Even through the safety-suit Hartford suffered from the heat. He retracted his i-r goggles, useless in all this smoke. Nef called. "I'm coming in, Mister." Hartford acknowledged. Great. One more blind man wandering in the smoke was what he needed.

He tongued his bitcher loud and shouted; "Gabe! Come this way. Gabe! Gabe!" The heat was intolerable. He positive-pressured his suit, ballooning the fabric away from his skin. How hot, he wondered, would the rounds packed into the butt of his Dardick-pistol have to get before they exploded?

As though in answer, a snap of gunfire sounded from the fog ahead. Some meat-head

had spooked. There were more shots as other troopers fired at their fantasies. "Cease fire, damn it!" Nef shouted over the command-circuit. "If anyone was hurt by you idiots, I'll court-martial every man with smoke in his gun barrel." Hartford hurried on. Ahead of him in the alley he heard Colonel Nef's voice, uncharacteristically soft. "Hartford, join me. I've found Piacentelli." Ahead in the smoke was a pinkness: the scarlet-suited commander kneeling above a body on the bricks.

Here in the open of planetary air, available to all the microscopic beasts of Kansas, Piacentelli was wearing only Class B's; his sneakers, shorts and tee-shirt. The center of the shirt sopped blood from the bullet-hole that funneled into Axenite Lieutenant Piacentelli's chest.

Nef stood. "The Decontamination Vehicle should be standing by," he said. "Get Piacentelli outside. We may be able to save him." He sounded unhopeful.

Hartford draped his friend's body across his shoulder. The smoke was bad, but he'd memorized his course through it. The air sucked in through his filter was clean, but hot. His helmet steamed opaque. As he stumbled out, blind, but guided by the colonel's voice, two men came forward to take Piacentelli over to the Decontamination Vehicle parked by the village gate. In the cooler air

Hartford's helmet cleared. A girl gnotobiotician from the Decontamination Squad pressed the pickup of her helmet's "ears" against Piacentelli's bloody chest.

She looked up. "He's dead, sir," she said.

Nef's voice boomed from his bitcher. "Burn the Stinker village!" he shouted. "These Gooks will pay for Piacentelli's death with their homes."

Hartford felt imminent danger of vomiting, bad business in a safety-suit. He fought it as he looked around. The column of smoke rising from the buildings already fired was sweeping around, carried by the morning wind that poured off the plateau. Everything within the walls of the rammed-earth houses would be incinerated. Kansannamura was destroyed. "Regroup by the vehicles," Hartford spoke to his troopers. He walked back to his jeep, the village flaming behind him.

The Decontamination Squad checked Hartford's safety-suit, and found it sound despite its roasting. Piacentelli they cocooned in plastic: he was contaminated and dangerous. As the five trucks rolled back toward the Barracks, they met families of Indigenous Hominids, smoke-stained, who retreated back into the sunflower-fields as the troopers drew near them. The Stinkers seemed to have salvaged little from the flames beyond an occasional blab-

rigar, perched on an old man's shoulder, or now and then a camelopard, fitted with a saddle and carrying a blanket-wrapped bundle of clothing and cooking-pots.

## V

**H**ARTFORD had to see Piacentelli's body placed in the Barracks morgue, where a necropsy would be performed by a safety-suited gnotobiotician. It was seldom that an Axenite was contaminated. Rarer yet was the death of a trooper who'd been exposed to bacteria. Information held in Pia's body might someday save lives.

Hartford, directing the sealing-off of the morgue from the rest of the Barracks, was not comforted by these reflections. He unsuited, shaved and showered, and put on fresh Class B's to finish what remained of this O.G. tour. On his way back up to the Board Room he had to pass the morgue again. Colonel Nef, in the midst of a cluster of lesser ranks, was there. On a wheeled cart, covered by a sheet, was a second body.

Hartford stopped. "What happened, sir?" he demanded. "Who is it?"

Nef raised the corner of the sheet with a hand that seemed infinitely weary. The body was Paula Piacentelli. "Another accident," the Colonel grunted.

A hydroponics corporal, S.C., spoke up. "She was relieved of duty as soon as she heard about her husband's death, sir. Someone should have stayed with her. She went up to Level Eight to be alone. There are only two of us on duty there through the night. She must have blundered off the walkway, blinded by her tears. However it happened, she caught hold of a lighting-cable where the insulation was frayed, and was electrocuted the moment she touched the wet seeding-bed. Colonel Nef found her there."

"I was going to console her on Gabriel Piacentelli's death," Nef said. "Leave the body here and clear out, all of you." No refrigeration was needed for Paula's corpse, of course. An uncontaminated Axenite was preserved by purity. The body might dry a bit, the integrity of the internal organs suffer somewhat from the corrosive effects of their own juices; but Paula's corpse would otherwise remain uncorrupted until taken outside and buried in bug-dirt. "Hartford," Nef said, "I'd like to have a talk with you."

"I'm still on O.G., sir," Hartford said.

"And I relieve you of that duty," Nef snapped. "Come up to my quarters."

Nasty Nef's sitting-room had the only window in the Barracks, a skylight through which poured the brilliance of

Kansas's pyrotechnic flood of stars. "Rest, Hartford. Sit down. Brandy?"

Hartford allowed that he could use some.

"What do you think of tonight's adventure, Lee?" Nef asked. "Don't look startled. I know the first name of every officer and non-com in the Regiment."

"What happened, sir, was horrible," Hartford said.

"I understand your feelings," Nef said. "Two tragic accidents, killing your two closest friends the same night. I am certain that the loss of these comrades will fire your zeal for getting the Stinkers under control. Isn't that right, Lee?" Nef took a cigar from the humidor next his chair.

"With all respect, sir," Hartford said, placing his empty brandy-glass on the table to his right, "I can hardly see how the events tonight were caused by the Indigenous Hominids."

"You must use the official name for the Gooks, mustn't you?" Nef mused. His voice turned harsh: "Someone stripped the safety-suit off Piacentelli, Mister."

**H**ARTFORD nodded, his face pale. The "A" of the Axenite's alphabet was Apprehension. As a germ-free—axenic, gnotobiotic—human being, he is superior in most ways to ordinary men. He's usually larger and stronger.

He never has dental caries, pimples, appendicitis, the common cold or certain cancers. No matter how much or how long he sweats, the Axenite doesn't stink; nor do his other excretions. On a contaminated world, however, the Axenite is a tender flower indeed. A baby's breath can be death to him, if that baby be a "normal" human; for no microbe is benign to the man without antibodies. To him a drop of rain may reek with pestilence, the scent of evening may be a lethal gas. "I can't understand their stripping Pia, sir," he said. "Why would they do such a terrible thing?"

"Because they're Stinkers!" Nef said. "Can you imagine what it must be like to be one of them? Every inch of your skin a-crawl with living filth, your guts packed with foulness, your whole frame a compromise with rottenness? Do you wonder that they'd delight to make us as unwholesome as they are themselves?" Colonel Nef lighted the cigar he'd been mulling. "Lee, do you think one Stinkerville destroyed is too high a price for them to pay for having murdered two Axenite troopers? For Piacentelli's wife is as much their victim as her husband."

Hartford shook his head. "I'm not sure, sir. What bothers me more than anything else is that it's my fault Pia went out last night. He asked

me to arrange for him to replace the scheduled picket officer, and I did."

"Lee, why was Piacentelli so anxious to pull this extra duty?" Nef asked.

Hartford tried unobtrusively to squirm his chair out of the jet-stream from Nef's cigar. "He told me he wanted to work on the language, sir," he said. "Pia really had such a project. He'd never had contact with anyone with a speech other than Standard before, and the problem of transducing one language into another fascinated him. The Kansans call their speech *Nihon-go*. Pia taught me to understand some of it."

"A waste of your time, Lee," Nef said. "You'll never have occasion to speak it. Be that as it may, unless Piacentelli was attempting to coax a course in Bedroom Kansan from a Stinker maiden, I can hardly understand why his lexicographical labors should require him to unsuit himself. No, Piacentelli was deliberately murdered."

"I'm puzzled, sir," Hartford admitted. "When we tossed those smoke-candles, I heard Pia shouting for us to stop it. Would he have done so if the Indigenous Hominids had him captive? Why did none of the natives lift a hand against us, though we were burning their homes? Why did Paula Piacentelli seem to know why Pia was going outside tonight? Why did he take a microscope

with him? Why did Paula kill herself?"

"DON'T noise that last 'why' around the Barracks, Mister," Nef growled. "Officially, she died in tear-blinded grief, an accident." He smiled. "Whatever our reason for burning out Stinkerville, Lee, we got it done. The fact that those half-humans down the hill bred and sweat and poisoned the soil within half an hour's walk has been a stench in my nostrils ever since we got here. Now they're gone. I'm as sorry as you that the Piacentelli's are dead. But the manner of their dying was such as to assure Axenic mankind a new home."

"I'm not sure I understand you, sir."

Nef poured them each a second brandy. He raised his; Hartford of necessity followed suit. "To Brotherhood," the colonel said. He stared into Hartford's eyes. "To *the* Brotherhood," he amended.

Hartford was tired, confused and in awe of Nef's rank; otherwise he might have ventured protest. Nef sipped his drink. "I must emphasize, Lee, that what I say is my opinion only, not Axenite policy. You see my point."

"I do, sir," Hartford said.

"Forgive me, then, for prefacing my remarks with a bit of truism," Nef said. "In all history before gnotobiotic man was cut from his mother through cellophane, the hu-

man being was never pure organism. Before us, every man who ever lived was, in fact, one mammal plus the sum of millions of viruses, rickettsia, bacteria, fungi and molds. When the old philosophers asked, 'What is man?' the answer could only be: 'Foul smell and blood in a bag.' We're the first men beyond that, Lee. The first real men, True Men, members of the winner-species, *Homo gnotobioticus*.

"We must destroy the bridge that led to us. We must destroy the Stinkers. Not just these quasi-human natives here on Kansas, but the Stinkers on Earth, and on every other planet where bug-laden man has followed Axenite. What chance has *Homo sapiens* to match his sapiency against *Homo gnotobioticus*, when he is a bifurcate septic tank, a polyculture of a thousand kinds of living dirt?"

Hartford finished his brandy, wishing he were anywhere else than in Nasty Nef's quarters, tired, ill at ease and a little drunk from the two brandies. "What do you propose, sir?" he asked with Academy politeness.

"Aha!" Nef rejoiced, pouring them each another drink. "You justify my trust, Lee. You perceive that I speak not merely if-ly, philosophically, but as a man of action, leashed only by temporary practicality." He leaned back in his

chair and regarded Hartford more as a sculptor might regard a recent product than a father a son, with uncritical approval. "Where were you born, Lee?"

"On Titan, sir."

"I thought so. You have the mark of natal excellence," Nef said. "You're a second or third-generation Axenite, then?"

"Third, sir," Hartford said.

"Splendid. Your grandparents were from their mothers' wombs untimely ripp'd; your parents and yourself born normally, in germ-free ambience. How fortunate we are, you and I! Third-generation Axenites. Eff-two of a new race." Nef paused in his recital. "There is one fact that chafes us, though. We, perforce the Columbus of tomorrow, explorers of the planets beyond even the stars we see here on the frontier, are held back by our Stinker cousins. They have the proper feeling, that only pure man might pioneer the alien worlds, for fear of destroying what he finds there. But who will inherit those planets when we've finished our explorations? Who will at the last till the fields of Kansas?"

"Colonists from Earth, sir," Hartford said. "From Eurus, Tinkle, Westside, Unashamed, T'ang, Williams's World and Hope. From all the planets normal man has colonized."

"Doesn't that annoy you,



Lee?" Nef asked. "That our work's fruit is to be enjoyed by shiploads of Stinkers?"

"They're as human as we, sir," Hartford said. He smiled. "You might say they just haven't had our advantages."

"You're tender-minded, Lee," Nef said. "We garrison a hundred worlds on the Frontier, planets our Stinker masters mustn't visit yet, lest Man contaminate some life-form yet unmet. We pioneer, clear planets as safe, and move on. For reward, we Axenites have three worlds of our own in the M'Bwene System, axenized for our use; we have the Academies on Luna and Titan, and a dome on Pluto. *It's not enough.* We are the new men, the next-comers to humanity. We must have worlds of our own. I, and the Brotherhood whose hand here I am, intend that Kansas shall be ours."

"What about the Stinkers?" Hartford asked. "What will happen to them if we decide to axenize Kansas?"

"Maybe they'll leave," Colonel Nef said, smiling in the manner that had won him the name "Nasty." "A few more punitive expeditions like tonight's—an incendiary grenade was thrown at Kansannamura, did you know that, Lee? I threw it—and we'll have no Stinkers underfoot. We soon will be able to mop and polish this world to our own high standards. We'll walk this

lovely world without safety-suits and breathe unfiltered air. We'll enter into our birth-right, Lee." Nef gazed at his cigar admiringly, though it had gone out. "So much for the moment, Brother Hartford," he said. "Perhaps we'd both do well to get some sleep."

Hartford jumped to attention and formally requested permission to withdraw. Nef nodded. Hartford about-faced and left the room.

## VI

THE things the colonel had told him hadn't fallen into place in his mind yet. Hartford was numb of thought.

Back in his own room in B.O.Q. the numbness cleared a bit. He poured himself a drink. Somehow, he thought, he'd become fairhaired boy to an Attila the Hun, an Alaric the Goth, a Hitler, a Haman; an Ashurbanipal I, a Rameses II. For Nef was equally with these a servant of Siva the Destroyer, with his plan to make Man pure.

His purification would involve the destruction of all non-axenic men and women all the way from the Home World to the newest beach-head on the Frontier; the sterilization of a hundred worlds as culture media for the new race; and the planting on the newly axenized soil of colonies of *Homo gnotobi-*

*oticus*, the feeder-on-hydropo-  
nic-greens, the inodorous, the  
thin-gutted, the strong  
toothed Superman.

Nef's pogrom had begun  
with the raid on the village,  
Hartford mused, his arms be-  
hind his head as he lay on his  
bunk. Nef had decided that  
this green and pleasant world  
belonged to the silver men,  
the true men, the new men.  
Us, Hartford thought. Earth's  
Stinker's, ordinary humanity  
with its common cold and its  
caries, would follow the Kan-  
san Indigenous Hominid, and  
the Great Auk, into history.

The double funeral of the  
Lieutenants Piacentelli was to  
be held at Retreat, outside  
the Barracks. Hartford won-  
dered a bit at the haste with  
which the two bodies were to  
be consigned to the earth of  
Kansas. Perhaps haste was  
necessary because of the mi-  
cro-organisms with which  
poor Pia's corpse was neces-  
sarily contaminated.

Hartford grimaced. Contam-  
inated humans must lead  
disgusting lives. They smelled  
of ferments, were bloated with  
bacterially elaborated gases,  
suffered rot in their very  
teeth. Their corpses—poor  
forefathers! —suffered cor-  
ruption that would never  
touch an Axenite, whose un-  
embalmed cadaver would last  
longer than the best-mummi-  
fied Pharaoh.

Whatever mysterious er-  
rand it had been that had tak-  
en Piacentelli outside the

Barracks, it had killed him.  
It was over.

Hartford marched the Ter-  
rible Third into position fac-  
ing the graves, cut into the  
soil at the base of the hun-  
dred-foot flagpole. The entire  
regiment, less only the hand-  
ful of men and women neces-  
sary to secure the Barracks,  
was on the Parade Ground.  
Colonel Nef, his scarlet safe-  
ty-suit brilliant in the light  
of the setting sun, stood be-  
side the graves, a finger of  
his right gauntlet inserted to  
mark his place in the black  
*Book of Honors and Ceremo-  
nies*.

The regiment stood at pa-  
rade-rest as a truck brought  
the bodies of two comrades  
through its ranks. As the im-  
provised hearse halted and  
twelve blue-suited casket-  
bearers stepped forward to  
lift the flag-draped boxes, Nef  
called the regiment to atten-  
tion. The bearers slow-  
marched the caskets to the  
graves and placed them on  
the lowering-devices.

NEF'S words of funeral  
were few. He spoke of the  
dedication of the two Axen-  
ites being laid to rest and bit-  
terly accused the Stinkers—  
this word seemed rude, in so  
formal a setting—of having  
murdered the young couple.  
He spoke of condign justice,  
and of revenge.

This done, he called: "Es-  
cort, less firing-party. Pre-  
sent, HAHMS! Firing-party,

FIRE THREE VOLLEYS!"

The shots of the Dardick-rifles echoed down the plateau to the smoldering village below. The Regimental Bugler, standing between the heads of the graves, flicked on his instrument. As the last volley spat from the muzzles of the rifles, the bugler played *Taps*.

Four men stepped forward to recover and fold the green-silk Pioneer colors, and the caskets were lowered to corruption in alien earth. The banner crept down the flag-staff, and the funeral was over.

Bone-weary, Hartford went from the Syphon to the refresher-room, where he checked his safety-suit and hung it.

Another officer was there, still in his blue safety-suit. Hartford wondered sleepily why he'd so long postponed unsuiting. Even the fellow's helmet was sealed. "Our first deaths on Kansas," Hartford remarked, wanting to coax the man into conversation and learn who he was. "I'd never realized till now that we're really soldiers, subject to violent death and formal burying." The man must be a replacement, come in on the supply ship a month ago, Hartford thought. Black hair, crewcut. Tanned. Must be from one of the M'Bwene Worlds, where an Axenite's naked skin can be unfiltered sunlight. "Both the Piacen-

tellis were my friends," Hartford said, determined to coax speech from the stranger.

The man's bitcher boomed, evidently set on full volume. "*Mattaku shirazu*," he said. "Excuse. Pia not teach entire use of Standard tongue."

Hartford's right hand tore through the plastic pellicle over his Dardick-pistol and brought the weapon to bear on the figure before him. "You're a Stinker!" he said. "Pia's safety-suit—that's the suit you're wearing."

"*Tonshu*," the Indigenous Hominid said, bowing his head. He indicated the empty holster at his side: he was unarmed. "I come *on taku*, here to your honored precincts, to speak of things done and of future things. You are Hartford?"

Hartford thought quickly. His responsibility was to the Garrison. This stranger was above all else a possible source of contamination, a carrier of the micro-bugs that could kill every Axenite on Kansas. Shooting him would rupture the safety-suit he wore. As it was, his exterior surface was clean; he could have entered the Barracks only by marching in from Retreat with the rest of the regiment, through the sterilizing Syphon. "I am Harford. Lee Hartford."

"**P**IA said you are a good man," the stranger said, bowing.

"What is your name?"

"Renkei. As you say, I take Pia's *uwa-zutsumi*, this smooth garment." Renkei indicated the safety-suit by slicking his hands over it. "I must enter here to talk with Hartford. To enter, I must have garment. Pia, my brother, is dead. I borrowed his garment. Can I, with you, stop the ugly thing that began last night in Kansannamura? *Kuwashiku wa zonzezu*; I do not know. I can but try."

What a perfect disguise a safety-suit made, Hartford thought. Besides, it was the only passport a man needed to enter the Barracks. He stared at the stranger. He looked no different to men Hartford had met before, Axenites whose grandparents had been born by aseptic Caesarian section in Nagoya or Canton, two of the great gnotobiotic centers of fifty years ago. Renkei was a Stinker, a Kansan, an Indigenous Hominid (ignominious name!); he was also, Hartford felt, a man.

"Tell me why you made the dangerous journey here, into the midst of your enemies," he said.

"The death of our friend Pia. The burning of Kansannamura. The war between my people and you who wear smooth garments," he said. "This is *aru-majiki koto*."

"A thing that ought not to be," Hartford said, translating. He was glad for the practice he'd gotten with Pia, speaking the native tongue. "Sit down,"

he said. "You must explain, Renkei."

The refresher-room, a hall filled with lockers and the machinery that automatically tested and refitted the safety-suits each time they returned to the Barracks, had a dozen entrances and exits. As Renkei, still completely sealed in Pia's safety suit, sat on the bench beside Hartford, the doors all closed at once. They hissed as the pneumatic seals were set in their frames.

Contamination Alert! Someone, most likely the Service girl on watch at the Status Board, had discovered that there was one more person in the Barracks than could be accounted for. A crash-priority head-count had been made. Each room and compartment had doubtless been eavesdropped through the built-in TV eyes and microphone ears.

One door at the far end of the hall burst open. A squad of safety-suited Service Police spilled in. At the point of their wedge was the scarlet uniform of Colonel Nef. Dardick-pistol in hand, he ran toward Renkei. "Don't shoot!" Hartford shouted, springing up.

"Get back, Mister," the colonel yelled. He dropped to one knee and squeezed all twelve rounds into the seated figure to Hartford's right. Service Police swooped down to pull Hartford away from the shattered body of Renkei. The

lieutenant's tee-shirt was stained, however, by flecks of blood splashed up as the SPs' bullets chewed into the Kansas. Hartford was contaminated.

**F**OR the next hour, Hartford had no more to say about his disposition than an angry bullock being dipped and scrubbed against an epidemic of cattle ticks.

His purification consisted in a sudsing with antiseptic soaps, this administered by a team of three Service Company gnotobioticians who were completely indifferent to his modesty and who seemed determined to peel off the outer surface of his skin. The women, safety-suited against being themselves contaminated, shaved off all his hair and ostentatiously packaged-up the shavings to be burned. They administered parenteral and enteric doses of broad-spectrum antibiotics. By the time the gnoto girls were finished, Hartford was as bald all over as a six-weeks foetus, as sore as though he'd been sand-blasted, slightly feverish as a result of the injections and madder than hell.

Ignoring his demands to see Colonel Nef at once, the Service Company troopers helped him into his safety-suit. Hartford would have to live inside the suit for a week's quarantine, watched carefully to see whether a missed microbe would breed within him in

spite of all the measures taken.

Hartford's company commander refused him permission to speak to the colonel. The lieutenant was to speak to no one concerning Renkei's invasion of the Barracks. He would remain safety-suited inside the Barracks or out; but would otherwise continue with his regular duties.

Hartford returned to the refresher-room where the murder had taken place. Renkei's macerated body had been removed for burning. The room had been carefully decontaminated, to the extent of hosing it down with detergent steam and individually re-refreshing each safety-suit in the huge hall's rows of lockers.

There was nothing to be done against Nef's madness, Hartford thought. He sat on the bench where Renkei had sat. The ultimate breakdown in communication is silencing one side of the dialogue, he thought. That's why killing a man is the ultimate sin; it removes forever the hope of understanding him. It ends for all time the conversation by which brothers may touch one another's mind.

What crap to find in a soldier's thoughts, Hartford told himself. He was an Axenite trooper, a Pioneer, a pistol-packing officer of infantry, commander of the Terrible Third Platoon. He was an Axenite, dedicated by the immaculacy of his birth to the

conquest of Man's frontiers.

Hartford snapped his plastic-sheathed Dardick-pistol, death in a supermarket wrapper, from his belt and placed it on the shelf of his locker. He'd seen the village of Kansannamura burned. Pia had died across his shoulder. Paula lay buried, too. Renkei's life had been splashed out on a stream of bullets. Enough of death.

Hartford picked up a pack of field-ration squeeze-tubes and walked down the hallway toward the Syphon.

His leaving would show on the Status Board, of course, but that didn't matter any more. He was deserting the regiment.

**H**E walked through the valley of desert that was the Hot Gut, and down into the birth-canal that was the Wet Gut, to emerge in the evening air of Kansas. The motor sergeant, stationed outside to guard the vehicles, saluted. "Going for a walk, sir?" he asked.

"If you'll lend me a jeep, I'll go for a ride," Hartford said. "I'd like to see how things look, down in the village."

"It's against regulations, but if you'll have the truck back by dark I can let it go, sir."

"Thank you, Sergeant." Hartford returned the salute and drove off downhill, toward Kansannamura.

What would happen to

Hartford-the-deserter? he wondered. At best, he'd be booted out of the troopers and grounded on Titan, or Luna or one of the M'Bwene planets, to serve the rest of his life as a paper-pusher, the bureaucratic equivalent of an endless Kitchen Police. At worst, he'd be exiled to Earth.

That meant exposure to bacteria, a gradual contamination till he'd been exposed to the full dirtiness in which earthlings daily lived, till he'd equipped himself with antibodies and a Stinker's immune-response.

The Service Police would be after him soon. Once out of sight of the Barracks, he turned his jeep off the road, onto one of the numberless paths used by camelopard riders on their trips between Stinker villages. He was headed upgrade, now, toward the mountains. On either side of the jeep were the fields of sunflowers, silent in the twilight calm. In a few moments the cool winds from the sea would flow into the land, stirring the billions of heart-shaped sunflower-leaves into the whisper that filled the evening and early-morning hours of Kansas.

His heart filled with hope and hopelessness, feeling like a happy suicide, Hartford sang to himself as the sunflower heads and leaves tattooed against his windshield. *Pioneers! O Pioneers* he sang, the anthem of the Axenites,

the fellowship he was leaving forever:

Lo, the darting bowling orb!  
Lo, the brother orbs around,  
all the clustering suns and planets,  
All the dazzling days, all  
the mystic nights with  
dreams, Pioneers! O pioneers!

The crunching of the jeep over the narrow track, the whipping of the plants against the vehicle and his singing all combined to drown out whatever noise it was the girl might have made. Hartford didn't see her till the jeep, rearing like a startled pony, climbing the flank of the camelopard the girl rode, tossed him into a tangle of green stalks and golden flowers.

## VII

THE riding camelopard bleated only a moment and was dead, its great neck broken by the jeep's charge. The girl, thrown clear, was up before Hartford.

A scarlet bird circled the scene of the wreck, the dead beast, the stalled jeep, the man and the woman sprawled by the side of the path. "*Miyo! Miyo! Miyo!*" cried the blabrigar: "See! See! See!"

Hartford rose and went to the girl, who was rubbing the shoulder she'd landed on. She stared, but didn't back away.

"*Kinodoku semban,*" he said very carefully: a *thousand-myriad pardons*. His bitcher, unfortunately, was set on full volume; his words of comfort blatted at the girl with parade-ground force. She put her hands over her ears.

The blabrigar above them, impressed by Hartford's stentorian voice, circled repeating "*Kinodoku semban*" over and over, till the girl called it down to rest quietly on her shoulder. The girl spoke to the bird, which stared at her lips with his head cocked to one side, an attentive student. She repeated four times the same message. The bird nodded, and repeated the phrase to her. "Yuke!" the girl said. The blabrigar spread its scarlet wings and flew up. It circled twice, then headed north, up into the mountains. Of the girl's message Hartford had understood only the native word for camelopard: *giraffu*. His Kansan was inadequate. He could understand it only if it were slowly spoken.

Hartford tongued his bitcher's controls to a conversational level. "*Kinodoku semban,*" he repeated, bowing.

The girl knelt beside the dead camelopard and stroked its head, over the central, vestigial horn. She looked up at Hartford with tears in her eyes. "*Tonshu,*" Hartford said: I bow my head.

"*Anata we dare desu ka?*" she asked.

"Lee Hartford," he replied.

The girl spoke slowly. "I am named Take." She knit her hands before her and bowed. "Forgive my bad actions," she said.

"The fault is entirely mine, Takeko," Hartford replied. He was sorry, of course, to have killed the girl's steed and to have subjected her to danger; he was very glad to have met her. Takeko wore what must have been the Kansan riding costume: short trousers and a jacket woven of floss from retted sunflower stalk, dyed a golden brown. Most curious, he thought, was her perfume; mild, flowerlike, slightly pungent. The smell of this lovely Stinker belied the trooper epithet.

Then it hit him.

The filters of a safety-suit remove, together with all the dust of the ambient air, all its character, including odor. The clean, characteristic smells of the Barracks, together with the bland spit-and-sweat odors of a long-worn safety-suit, were all an Axenite came in contact with.

If he were able to smell the outside world, it could only be because his gnotobiotic security was compromised.

Hartford inspected his safety-suit, peering where he could and twisting and feeling the surfaces he couldn't see. Takeko laughed. She reached across his shoulder and lifted a flap of torn fabric, ripped loose when Hartford had flown from his jeep.

**H**IS panic would have been unmanly in a normal human; but Hartford all his life had been impressed with the horror of contamination. He ran blindly, though he knew that his deepened breathing was drawing the germ-laden air of Kansas deeper into his lungs. He ran through lanes of sunflowers, flailing his arms, into the darkness, away from the alien girl, away from the fear of going septic. He ran and stumbled and fell and ran again. All his life he'd been warned of the consequences of becoming infected with the bacteria against which he had no defenses. Now he was so infected.

When Hartford fell the last time it was for sheer lack of wind.

He opened his helmet and tossed it aside. Dead already, he could lose nothing by making himself comfortable for dying. He shivered. The chill of infection? No, the night was cool. He looked about him in the light of the sky of stars. The fields were below him, rustling in a million private conversations as the breeze filtered through them. It was a lovely place to die, here on the crest of a hill.

Hartford lay back and stared into the curtain of stars that rippled above him. Perhaps he wouldn't wake, he thought. With this thought he slept.

The sunlight stung his eyes.



He sprang to his feet, then bent and groaned. Sore. He'd slept on naked soil, packed hard by the hillcrest winds. He stretched his hard-bedded muscles. For a dead man, he felt good. The alien bacteria and viruses within him were establishing beachheads, multiplying their platoons to companies, their companies to battalions. By the time they'd reached division-strength, he thought, he'd be well aware of the invasion.

Meanwhile, breakfast.

He opened a package of field-rations, squeeze-tube beans. He inserted the nozzle of the tube into his mouth and fed himself a dollop of the stuff. It felt strange to eat directly from the tube, not having inserted the adjutage into his helmet-opening to be sterilized first. Being septic saved a lot of time.

He finished the squeeze-tube beans and was thirsty. Down at the base of his hill was a little stream. Hartford thoughtfully peeled off his safety-suit. Dressed only in his shorts, shirtless, barefoot and tender, he made his way down to the water.

It was delicious.

Did bacteria impart that brisk taste? Hartford wondered. So far committed to contamination that nothing mattered, he shed his shorts and dived into the stream. It was chilly, delightful. He returned to shore and lay on the grass for the sun to toast him

dry. He began to relax... The girl giggled.

**H**ARTFORD snatched up his shorts and pulled them on. It was Takeko. She was afoot, wearing the costume he'd last seen her with; but she had strapped on her back a leather wallet. A blabrigar sat on Takeko's shoulder. She spoke to it, repeating her message four times and listening to the bird repeat once. Then she shoed the scarlet bird away, to carry north the message that Hartford had been found.

"I laugh. Excuse me," she said. "But you funny." Takeko patted her head. Hartford understood. Shaved by the Decontamination Squad, he was bald and eyebrowless, entirely lacking in body hair. He smiled. "*Hai*."

"Your skin is like the hide of a *giraffu*," she said.

Hartford looked down at his freckled arm. True, the pattern of brown against pink was very like the reticulations of a camelopard. "Where did you learn to speak Standard, Takeko?"

"Pia-san talked to my cousin, and I listened," she said. "Kansannamura was my home. Pia often visited us." Hartford, who after Nasty Nef was the man most responsible for the burning of Takeko's village, was silent. "When your *jeepu-kuruma* hit my *giraffu*, I think you are Renkei," the Kansan girl said. "Renkei is

my cousin. He go to see what can be done."

"Renkei is dead," Hartford told her.

"*Iie!*" Takeko pressed her hands against her face. "You strangers are quick to kill, to burn, to sweep away."

"I did not wish him harmed," Hartford said.

"You pink folk will not be happy until all our people are dead and under the ground," Takeko moaned. "You will not be pleased until you can march across our graves."

"That is not so."

"Pia-san said it," Takeko said. "He said that your Nef is a master of the Brotherhood, which wishes death to all people who do not wear glass heads."

"If that is true, I am no longer a part of it, Takeko-san," Hartford said. "I have left Nef and his Barracks. I am a dead man."

"You will come with me," Takeko said. "You will not be dead for many years, unless Nef and his Brotherhood kill you." She looked into the sky, where a red bird was circling. It hawked down to her shoulder and sat there, its head tilted to her. "Takeko," the girl said to the bird. With this key to unlock its message the blabrigar spilled its rote. Hartford recognized a word or two of the bird-o-gram, but not the full sense of the message.

Takeko reached into the pocket of her short trousers for a few zebra-striped sun-

flower-seeds. The blabrigar picked these daintily from her hand, using its beak like a pair of precise tweezers, pinching up one seed at a time and cracking it. "There will soon come *giraffu* to take us to a further village," Takeko said. "You are to speak to our chief men there, to tell them what happened to Renkei, why he was killed in the Stone House."

"I may not live through this day," Hartford said. "It is not easy to explain. We wear the 'glass head' to keep out your air. It is deadly, *doku*, to us. Do you understand, Takeko?"

"**YOU** may be tired, having slept on the old bones of the hill," she said. "You may be hungry, having eaten only the squeezings of your metal sausages. But you are not hurt badly, nor are you old, Lee-san. Why should you die?"

"You cannot understand," Hartford said. He spoke more to himself than to the girl. "The medicine here is certainly primitive. You have no concept of the biological nature of disease. Tell me, Takeko-san, do you Kansans know anything of the very, very small..."

"Microscopic?" Takeko asked.

"Piacentelli did a splendid job of teaching you the Standard language," Hartford said. He looked up and down Takeko's trim, just post-adolescent figure in frank appraisal, jeal-

ously wondering whether Gabe could have achieved his remarkable pedagogical results by means of the pillow-book method of linguistic instruction so popular with soldiers of occupation in every time and climate. That thought, he rebuked himself, was unworthy of Pia's memory. In any case, his friend had conducted his researches wearing that guarantee of chastity, a safety-suit.

"We'll have to wait an hour or so until the *giraffu* come," Takeko said.

She unstrapped the wallet from her back and unpacked it on the grass at the edge of the little stream. The Kansan girl took out a coil of line, spun from the stalk of the sunflower, and a bronze hook. "We will feed the gentleman from the Stone House," she said. Hartford watched with amusement as she baited the hook with a bit of the bread from her knapsack, twirled the line about her head and dropped it into the center of the stream. "This place has many fish," she said. "We will not wait long before we eat."

It took Takeko only ten minutes to have three seven-inch fish, so plump and meaty-looking that not even a xenologist would have wasted time studying them, lying on the grass.

Hartford demanded equal time with the fishline, and discovered to his gratification that the dough he pinched off

the chapattis and molded to the hook took the fancy of Kansas fish as well as Takeko's offerings. With a sense of at last participating in the affairs of the universe, he decapitated and decaudated the six fish they ended with, and gutted them with a rich delight in the juicy messiness of the task.

Hartford and Takeko scissored the fillets in split twigs and roasted them, like aquatic weenies, over a fire built from the pithy stalks of dead sunflowers. The firepit, a saucer of scooped-out dirt, had buried beneath it half a dozen of the swollen roots of sunflowers, each wrapped in the cordiform, sharkskin-surfaced leaf of the parent plant, to roast beneath the coals.

THEY seasoned their fish with *daikon*, a kind of horseradish; and their plates were the fresh-baked, flat, unleavened chappattis Takeko had brought in her pack. The tubers, eaten from a fresh leaf-plate, needed only butter. Takeko had this, too, churned of camelopard-milk cream. Buds or flower-heads of the sunflower were eaten with sunflower oil, like artichokes. "Your people have a good friend in the sunflower," Hartford remarked, wiping his lips.

"With the golden flower and the golden *giraffu*, with the *take*-grass and the good soil, we had a rich life here

before you glass-headed men came," Takeko said. "Now we are treated in our own villages like rats to be driven out, in our fields as gnawing vermin. Why is your Brotherhood so angry with us, Lee-san, who live in only a few places on a wide world? Is there no law among the light-skinned people? We have lived here, on the world you call Kansas, for many generations. We were once of Earth, as were your grandfathers."

"All humans were once of Earth," Hartford said.

"If we are as much human as you," she said, "why does your Nef call us *Hominids*? Is that a name to give a brother?"

"It is better than *Stinker*," Hartford suggested.

"*Hai!* I tell you, Lee-san why you must re-name us. It is because men do not kill men until they give their brother-enemy a monstrous name. Why do you wish to kill us all?" she asked.

"I'm not a member of the Brotherhood," Hartford said. "I'm only a man who was born on Axenite. That means, until your beast and my jeep collided, tearing my safety-suit, I was an animal uncontaminated by microscopic life. These microscopic animals, Takeko, are deadly to an Axenite."

"You are not dead, though," Takeko suggested. "*Ne?*"

"I've been breathing contaminated air for twelve hours," Hartford said. "It's

true. I cannot understand why I have no fever, no malaise, no symptoms of pneumonia."

Takeko giggled. "Forgive me," she said. "*Kinodoku semban*; but you seem to be sorry to be alive." She was silent for a moment, listening. She pointed north. "My father will appear with our *giraffu* soon," she said. "I can hear them."

Takeko's father rode up a moment later, an unbent man of seventy. He sat astride his camelopard, a comic quadruped little better designed as a beast of burden than an ostrich, with as much dignity as though his steed were an Arabian stallion. His name, Takeko said, was Kiwa-san. The old man bowed from his saddle when his daughter introduced Hartford.

AT Kiwa-san's command the two *giraffu* he'd brought along on lead-reins spread their legs to bring their down-sloping backs a scant four feet from the ground. The saddles, with dangling, boot-like gambadoes in place of ordinary stirrups, seemed inaccessible to Hartford. "Watch me," Takeko told him. She took a short run up behind her *giraffu* and, with a movement like a leap-frog hurdle, flipped herself up into the saddle.

Hartford stepped back, ran and leaped. He succeeded only in banging his shoes into the right sifle-joint of his mount and in flipping himself to the ground. In the interest of



haste, grace was abandoned. Hartford monkey-crawled up a sturdy cane of bamboo growing nearby and, as Kiwa-san maneuvered his beast, stepped over into the saddle.

"I'd better take my safety-suit and helmet," he said. "If the troopers should find it, they could follow our trail."

"*Hai!*" Takeko said, agreeing. She leaped from her *giraffu*, packed the safety-suit and helmet onto the beast, and remounted. "We will now go to Yamamura," she said. Old Kiwa spoke, and she translated: "We must move quickly and with care," she said. "My father heard an *hikoki*—how do you say?" she asked, raising and lowering her hand.

"A veeto-platform," Hartford said. "I mustn't be seen, Takeko. Colonel Nef would use my presence as an excuse to kill any of your people around me."

The ride, though cautious, was indeed demanding. Hartford felt tendons stretch he didn't know he had. Muscles were bruised from his instep to his upper back, and the skin was chafed away from his inner thighs as though he'd been riding an unplanned plank. He understood, well before the journey to the mountain village was over, the importance of that lifetime exercise, best begun by riding young, known to generations of horsemen as "stretching the crutch." He swore to himself that his future transportation, if he had

a future through which to transport himself, would be by boots or wheeled vehicle.

The three of them were following no clear path. Kiwa led. Hartford noted that their course took them along the contours of streams, on the borders of fields, through contrasting background that would make their presence less obvious from the air.

They were in a thicket of bamboo when the veeto-platform did appear.

The instant they heard its whistle, Kiwa spoke a sharp word. He and his daughter slipped from their mounts, loosed the brow-bands of their camelopards and unlocked their girths, tossed off the saddles and dangling gambadoes and gave the animals each a sharp slap on the rump that sent them crashing through the bamboo. They helped Hartford unsaddle and send his beast off in another direction, and lay down in the direction the late-morning sun dialed the shadows of the bamboo stems.

If the veeto-pilot saw the *giraffu* now, they were saddleless and innocent.

The downdraft of the veeto-platform puffed dust up from the ground around them, and pressed down the leafy tops of the bamboo like a great hand stroking across the thicket. Hartford, aware of the way his bald head and pink face would stand out, dusted his hands with the soil and

laced his dusty fingers over his scalp.

The platform passed almost directly over them, shooting fragments of dust and bamboo-duff into every particle of clothing, into ears and eyes and nostrils, with the whirlwind of its passage.

## VIII

IT took them half an hour to recover their *giraffu* and saddle up again, but Hartford did not regret the delay.

Aboard the grotesque mount again, he groaned. To mask the misery of his unaccustomed pounding he paid scientific attention to the landscape, the gait of the camelopards, the leather of the saddles, and the posture and person of Takeko—this last by far the most effective of his analgesic thoughts.

They rode on an ancient piedmont, among the foothills of a worn-down mountain-range. The leather of their saddles and gambadoes was, by its pattern, obviously tanned camelopard-hide. Hartford was certain that this pattern would by the end of their journey be an indelible part of his own hide. The *giraffu*, remarkably swift and easy-moving over the rugged, heavily grown terrain, ambled, moving both legs on the same side together. And Takeko was lovely.

Hartford decided to essay his Kansan. He practiced his

question: "Is Yamamura far from here?" mentally, moving his lips, until he was sure he'd mastered the phrasing. Then he addressed Old Kiwa. "*Yamamura wa koko kara toi desu ka?*"

Kiwa smiled, and rattled off an answer much too brisk for Hartford to catch. He pointed ahead and up. "He says we must go through the pass, under the Great Buddha," Takeko explained. "We have only an hour to go."

"*Arigato,*" Hartford said, suppressing a moan. Another hour!

The pass Kiwa had spoken of loomed ahead. It was quite narrow, and walled on either side by the almost perpendicular flanks of mountains, shoulder to shoulder. Kiwa went first, for the cleft could only be negotiated in single file. Takeko followed her father, and Hartford took up the rear. In the ravine it was dark. The camelopards, sensing their mangers up ahead, paced more quickly. Suddenly the canyon was light, the walls spreading further apart here.

Far up on Hartford's right, seated on a shelf left from some ancient avalanche, was a gigantic figure cast of a coppery metal, green now against the granite wall. "Who is that?" Hartford called to Takeko.

"It is our *Daibutsu,*" Takeko said. "It is the *Amida Buddha,* the Lord of Boundless Light."

"Do you worship him?"

Takeko smiled and shook her head. "We worship not any man, but a Way," she said. "*Butsудо*—the Way of the Buddha. We are nearly to the village now, Lee-san."

"I thank the Lord Buddha for that," Hartford said, bowing from his saddle toward the great bronze image.

**YAMAMURA** nestled in a fold of the high mountains. The fields that supported the village, its population now doubled by the refugees from Kansannamura, were tucked here and there on narrow ledges, watered by bamboo flumes that stole water from the mountain streams. The crop of greatest importance was the ubiquitous sunflower, supplier of bread and soap ash, of cloth and bath oil, birdseed and writing paper. Bamboo grew in clefts and shelves too slight for cultivation. This was the wood for tools, the water pipe, the house wattles and, in its youth, the salad of the people, the only wood eaten in its native state. There were also carrots, beets and tiny plum-trees, and the horseradish, *daikon*. Yamamura was a lovely place, Hartford decided.

It was twenty hours from the moment of his contamination that Hartford dismounted. He moved into the house Kiwa invited him to with as much tenderness as though he'd been carefully bastin-

adoed and flayed. He was, nonetheless, free of febrile symptoms. He had breathed Kansan air, had eaten its fish and drunk its water; he'd spoken with a Kansan native and had lain with his face in Kansan dust. He was still as healthy as any Axenite, never before in the saddle, would be after a five-hour ride.

Kiwa's wife and Takeko's mother was a little woman named Toyomi-san, dressed in brightly patterned garments a good deal more formal than her daughter's jacket and shorts. Toyomi-san spoke no Standard, but she made quite clear to Hartford his welcome. She led him into a large, steam-filled room, where she indicated he was first to wash himself then soak, then dry and dress in the clean clothing she'd laid out for his use.

The soaking water was very hot, and very welcome. Hartford sat in the copper-bottomed tub, his muscles hard and sore, until he felt the very marrow of his bones had cooked. He stepped from the tub then and dried gently, easy on his chafed back and legs.

"The oil will help," Takeko said, slipping a screen shut behind her. She had bathed and brushed her black hair free of the bamboo-thicket dust, and wore now a brilliant, silk *kimono* of the sort her mother was wearing.

Hartford held the towel at his waist.



"Excuse me," he said.

Takeko giggled. "Are you unique, Lee-san, that you must hide yourself? Lie down on the cot, and I will make you comfortable."

Wondering greatly at the folkways of Kansas, but determined to commit no gaffe that would imperil his relations with this girl, Hartford lay face down on the mat-covered cot. Takeko removed the *tenugi* towel with which he'd modestly draped himself and gently stroked sweet-scented sunflower-seed oil into his macerated skin. Using the radical border of her hands, which were remarkably strong, Takeko coaxed the muscles to relax with effleurage; and she further softened the clonic hardness with a kneading motion. "This is," she said, working her thumb-knuckles up his spinal-column as though telling the beads of his vertebrae, "one of the good things my ancestors brought from earth."

"*Yoroshiku soro*," Hartford grunted agreement. "It is good."

**H**ALF an hour later, his skin soothed with oil and his muscles suppled by Takeko's massage, Hartford joined the family for supper. The Kansans used paired sticks for eating. Hartford, who'd not yet been introduced to the skill of using these *o-hash*i, and who was too hungry to practice now, was given a

metal spoon with which to eat.

When they'd finished their meal, several elder Kansans entered Kiwa-san's house. Each bowed to Hartford, who, bald-headed, his feet socked into unfamiliar *geta* and wearing mitten-toed stockings, bowed in return. The newcomers each spoke some Standard, but it was obvious that Takeko was the most fluent of them all. "Pia-san taught Renkei; Renkei taught me," the girl explained. "I was the second-best speaker. It would be better if Renkei were here."

"I regret his death more deeply than I can tell you," Hartford said. "Renkei and Pia my friend are both dead now. This is what Renkei told me: *aru-majiki koto*, a thing that ought not to be."

The Kansans, seated on the cushions about the room, nodded. "Do you know, Lee-san, the greatest law of life?" Takeko asked.

"You said, beside the stream where we fished, that men do not kill men," Hartford answered. "But they do."

"It is an ideal we have more nearly than the glass-heads," one of the Kansan elders said. "In the past four days, Renkei has died, and Pia-san. In the years before you Latecomers came to build the Stone House and cut roads and practice making holes in paper at a distance, no man died here at the hand of another."

"We cannot teach the glass-

heads our way when they walk about only with guns, when they live in the Stone House none of us can enter without dying, when they look at us with glass bowls over their faces and hate in their hearts," Takeko said.

"The hate is hardly needful," Hartford said. "But the helmets must remain if Axenites are to live on Kansas."

"Do you live?" Takeko asked quietly.

"I do," Hartford said. "It puzzles me."

"Does it not puzzle you that none of us harbors open sores, or coughs up phlegm, or dies of fever?" Kiwa asked, speaking through his daughter's intermediation.

"I had not thought of that," Hartford admitted. "I have never before lived so close to Stinkers." Embarrassed, he stopped short. "I'm sorry," he said. "*Shitsurei shimashita.*"

"You meant us no discourtesy," Takeko said. "Think, Lee, of the word you used. Do we indeed stink?"

"No," Hartford said. "It's strange. I've been told all my life of the rot and fermentation within ordinary mammals, and of the evil smells elaborated by these processes. But you, and all of Kansas, stink no more than Axenites do. You have, as we, the mulberry odor of saliva, the wheat smell of thiamin, the faint musk oil of the hair. Even your camelpards smell sweet."

THE girl laughed. "If you think all Kansas a place of sweet perfumes, smell this, Lee-san," she said. She took a covered dish and opened it. "This is *takuwan*," she said. A smell strong as that of limburger cheese made itself known in the room. "It is pickled turnip, made in the old manner of our island forefathers on Earth."

"Whew!" Hartford said. "There is the true Stinker of Kansas."

"Pia-san learned much from the bad-smelling *takuwan*," Takeko said. "His wife knew about the small stink-makers, these bacteria; she was a user of microscopes. She looked for them in the air of Kansas, and in our soil. Pia-san went even further. He took drops of our blood and other things to test."

"Tell our guest, Take-chan, what Pia found," Old Kiwa told his daughter.

"*Hai, O to san.*" The girl turned to Hartford. "In our bodies there are no mischief-makers of the sort Earth-people know. There are not even those juices Pia-san called 'footprints of the bugs.'"

"He must have meant you have no bacterial antibodies," Hartford said. "That explains the whole package," he went on, with growing excitement. "Why I'm alive without my safety-suit. What Piacentelli went outside to find. And, when he found it, why he unsuited himself, knowing this

world as pure as Titan. You're Axenites, you Kansans! You're as germ-free as the troopers."

"The whole truth is less simple," said the lean old man who'd been introduced to Hartford as Yamata, the calligrapher.

"Does the rubble of your forest-floors never turn to mould, then?" Hartford asked. "Do the bodies of your buried fathers lie uncorrupted in their graves?"

"Of course not," Takeko said. "If that happened, we would be buried ourselves in unmouldered leaves. The bodies of our ancestors would be stacked about us, unchanging, like logs for the charcoal-burners. Our soil would die, and all men would die with it, if dead things did not crumble to make new soil."

"Show our friend the hero of our epic," the calligrapher told her.

"Hai." Takeko stood and went to another room, going through the ritual of kneeling to slide the door screen, standing, kneeling, standing, with a grace that made the kimono she wore the loveliest of garments. She brought to the small table at the center of the room a heavy object wrapped in a yellow silk *tenugui*. Near this on the table she placed a small lamp, fueled with sunflower-seed oil. She lighted the lamp and uncovered the instrument she'd brought in.

It was the microscope Pia-

centelli had taken from the Barracks on his fatal expedition.

Takeko dipped a chopstick into a dish and placed it beneath the objective of the microscope. "We shall look at a spot of evil-smelling *takuwan*-juice," she said. "There is light enough. Make it fit your eyes, Lee-san; and you will know the secret of Jodo, this world you call Kansas."

## IX

**H**ARTFORD knelt over the microscope in the yoga-posture called for by its being so near the floor and tried to adjust the instrument as he remembered having seen it done. He focused the coarse adjustment of the 'scope till he saw spots darting about the fluid Takeko had placed on the slide. He nailed the spots down with a gentle hand on the fine adjustment.

The juice of the pickled turnip was aswim with tiny bodies that looked like tadpoles. "What are they?" he asked, peering into the micro-world below him.

"Pia-san named them monads," said the carpenter, white-bearded Togo. "We all have them in our bodies. You have them now in yours. Our soil is alive with them. They chew the chaff of our fields into black loam; they turn to dust the flesh of our fathers. They cause turnips to become *takuwan*."

Hartford rocked back from the microscope to sit again on his heels. "You have no disease, no benign bacterial flora and of course no bacterial antibodies. Instead you have this whip-tailed animalcule, this monad. Is this correct?"

"So Pia-san said," Takeko agreed. "He said that the monad is a jealous beast. It is a tiger among the pygmies, he said. No little nuisance-makers can exist on Kansas; the monad would eat them in a rage."

"The ultimate antibiotic," Hartford said. "A micro-organism that functions as a saprophyte, a soil-former and a scavenger. Besides all this, it's a universal phagocyte, policing up the human environment inside and out, to keep it clean of any other microscopic organisms. The monad fills every niche in the micro-ecology of the planet."

"This is what Pia-san and his *okusama*, poor dead girl, discovered," Takeko said. "Renkei entered the Stone House to tell you that we do not stink, that we are not dangerous. Three people have died to tell this—and Nef still does not know."

"I think he may know it after all," Hartford said. "He knows about the monad, and fears it. This little bug means that every member of the human race can join his damned Brotherhood. A crew of monads in his gut would make every man on Stinker Earth

a dignotobiote, germ-free except for his housekeeping protozoa.

"Until Pia-san told us," Yamata said, "we knew nothing except that we lived longer than our ancestors had. We knew that we did not suffer from the strange tirednesses the books told of, ills caused by the little animals. We did not know that the smallest natives of this planet had made of us their fortresses."

"If I could only get past Nasty Nef to tell this to the Axenites," Hartford said.

"*Ron yori shoko*," Kiwa-san said. Takeko translated for her father. "He says, Proof is stronger than argument."

"Indeed," Hartford agreed. "But how do I prove to the troopers that the monad sweeps Kansas cleaner than their Barracks floors?"

"As Pia-san tried to," Takeko said. "He removed his glasshead and his silken suit. He breathed our air and ate our food. He wanted to prove that he could live, but he was killed before he could. Now you have made that proof. Your brothers of the Stone House must undress of their silken suits and come among us, Lee-san."

"**T**HAT they will not," Hartford said. "They are certain they will die if they inhale a breath of Kansas air, chew a bite of Kansas food, drink your clear stream water. I was certain I would

die when my safety-suit was torn: remember our meeting, Takeko-san? It will not be easy to persuade my brothers and sisters in the Barracks to forget their fears. We are so sure, we Axenites, that contamination will kill us that we'd rather dance with lightning and eat stones than walk this world unprotected and eat its fruits."

When Takeko had respoken these words to her father, the old man said again: "*Ron yori shoko.*" Proof is greater than argument.

"Proof?" Hartford asked. "I am not proof enough to have a Regiment of Axenites shed their safety-suits and declare the Kansans their brothers. It would take years of lab work before the first of them would walk suitless onto bug-dirt. We'd have to knock down the walls of the Barracks and burn two thousand-odd safety-suits, before we'd have the Axenite troopers here trapped into being guinea-pigs."

"Each trooper carries the Stone House with him when he walks our roads," the calligrapher remarked. "We have but to break through the silken suit he wears to make a trooper know the garment isn't needed here."

"He'd die of fright," Hartford said. "I very nearly did. Besides, each column of troopers, a squad or the Regiment, goes out with a Decontamination Team. If a man becomes septic through some sort of

accident, he's hustled by a cleanup squad into a Decontamination Vehicle for his shower, shave and shots. I know the process well," he said, running his palm over his naked head.

"*Ano ne,*" Kiwa said. "Will this Decontamination-*kuruma* house two thousand men? Two hundred? Twenty?"

"It will hold two or three troopers at once," Hartford answered. "We have several of them, though."

"So...*ka?*" white-bearded Togo exclaimed. He leaned over to whisper into the ear of Takeko's father, who nodded and smiled.

Old Kiwa spoke, and Takeko interpreted. "We must surprise a group of troopers," he said. "We must cause all their silken suits to be torn, or all their glass heads shattered, at one time. It is so simple as that."

"Simple in all but the doing," said Yamata the calligrapher. He picked up a brush and sketched on the mat before him a line of trooper-silhouettes, a platoon, marching single-file. "How do we break into all those Stone Houses at once?" he asked.

Hartford's face was pale. "We could use grenades, perhaps," he said. "Or bombs. After all, these troopers we speak of are no more than my family, my village, my people. I may of course be expected to cooperate in their destruction."

**TAKEKO** reached over and took his hand, then dropped it. "*Ano ne!* You do not understand! We can no more injure your brothers than you can, Lee-san. We may not harm any living person. Forgive us. You misunderstand us. We are bound, Lee-sensei, by *Butsudo*: the Peaceful Path of the Lord Buddha." She bowed toward him, her hands clasped together, her head touching the *tatami*.

"It is my fault if I have misunderstood," Hartford said. The men were staring, Takeko's eyes were filled with tears, the room was silent. "I do not know you well. I did not know you do not kill."

"Let me tell you, then," Takeko said, rising to sit beside him. "Our people, who once lived on islands in the greater sea of Earth, were folk mighty in battle. Their pride was named the Way of the Warrior, which is called *Bushido*. Their loveliest flower, the *sakura* or cherry-blossom, they made the symbol of the warrior, so highly did they hold his calling.

"After their villages had been crushed many times in war, our ancestors vowed forever to abandon *Bushido*, the warrior's path, and to place their feet in the path of the Lord Buddha, called *Butsudo*. This was many years ago, before any man had ventured into space, before our ancestors found this world you call

Kansas. When they came here, they came in peace. And they named this place *Jodo*, which we still call it. It means the Pure Land, where men are just. And all justice is built on a single law. No man shall take man's life."

"I spoke of the Axenite Brotherhood," Hartford said. "These men are a group of our leaders—Colonel Nef is one; he invited me to join him—who have decided that Stinker humanity must go. They're dedicated men, prepared to extinguish all the rest of mankind, to sterilize Earth and reseed it as a gnotobiotopic Paradise. Nef has, I fear, already killed three people to this end.

"You who cannot kill will face an enemy trained in killing," he went on. "Your camelopard-mounted messengers will meet veeto-platforms with machine-guns. Your peaceful words will be drowned out by the roar of Dardick-rifles. How can you hope to live if you will not kill?"

"If the choice were death or killing, Lee-san, we would gladly die," Takeko said. "We have a saying, *Muriga toreba dori ga hikkomu*. When might takes charge justice withdraws. We will not kill, and neither will we be defeated."

Yamata the calligrapher addressed Hartford. "How badly torn must a safety-suit be, to make necessary the wearer's going into the purification cart?" he asked.

"Only so much as the point of a pin would make would be enough," Hartford said.

"We have to drive pins into several dozens of men's clothing at one time," Yamata said. He smiled. "So phrased, the mountain does not seem too tall to be climbed."

"It would be difficult to puncture the safety-suits without hurting the wearers," Hartford said. "Few armies are so solicitous."

"*Butsудо* forbids us to kill men," Takeko said. "It does not deny us the right, in pointing them to the path of knowledge, to jab them a bit." She smiled at Hartford.

"**H**OW do you propose to do this jabbing?" he asked. "I remind you all, if you need reminding, that our troopers travel with Dardick-rifles and machine-guns, with rocket-mounted jeeps and vee-platforms from which bombs can be dropped."

Kiwa spoke. "We are like a bear after honey," he said. "We are hungry, but do not wish to taste the stings of the guardians of the hive. We must surprise them."

Hartford, his knees stiff with kneeling, his backside sore from the camelopard-saddle despite the expert massage, got up to pace the floor. "We need a needle-gun of some sort," he said.

"No gun," insisted white-bearded Togo.

"It need have only slight

power," Hartford said. "It would throw its projectile only forcefully enough to penetrate the fabric of a safety-suit."

"It has been so many generations since we have been soldiers, we know nothing of weapons," Yamata-san said. He wet a fine brush with *sumi*, Chinese ink, and sketched rapidly. "I remember seeing pictures of *Bushi* carrying a sort of throwing-sticks with pointed ends in pockets on their backs, and flinging them like little spears with a kind of one-stringed lute."

Hartford stared at the calligrapher's drawing, then exclaimed. "Of course! A bow and arrow."

Takeko inspected the sketch. "The man who threw the stick is standing," she said. "Could we stand against troopers?"

"A man would have to stand exposed to shoot an arrow," Hartford admitted. "The Dardick-guns would mow us down before we'd punctured a single safety-suit." He paced up and down the room, the only trained warrior there, trying to devise his unkillling weapon.

"We have wine, Lee-san," Takeko said. "Please sit and drink."

Hartford, bemused with his problem, folded his legs onto his cushion and lowered himself gently. Takeko's mother appeared with tiny cups of hot wine, *sake*. Hartford

bowed with the others and sipped. The stuff was good, rather like a dry sherry.

Takeko bowed to leave the room, returned, bowed and commenced playing a tune with the instrument she'd brought in. It was a flute made of bamboo, with a high-pitched, pure sound Hartford found quite pleasant. He frowned, though, after a moment. Takeko took the pipe from her lips. "You do not enjoy my playing?" she asked.

"What is that made of?" Hartford demanded "Just bamboo, isn't it?"

"*Hai, take,*" Takeko agreed. "It is my name. *Take*—bamboo. This is only a *shakuhachi*, for very simple music."

Hartford smiled and bowed toward Togo-san, the white-bearded carpenter. "Sir," he said, "if we may have your advice, I believe Takeko-chan has helped us find our weapon."

## X

THE meeting broke up to adjourn to Togo-san's workshop. There was bamboo there in plenty, and young men eager to help the ex-lieutenant of Axenites in testing his device. As the week wore on, young Kansans appeared from other villages, called by blabrigars and messengers on camelopard-back to join the army that was to make brothers and sisters of the troopers of First Regiment.

The blowgun Hartford finally established as his field model was some two yards long, made of bamboo bored through the joints and polished smooth within, of a caliber somewhat less than the diameter of a man's little finger. Though the bamboo-tube was somewhat flexible, Togo-san and his apprentices were able to bind a front sight to the muzzle, allowing somewhat greater accuracy that could be obtained by pointing and hoping.

The dart was about the length of a man's hand. Its point was a sliver of bamboo, sharp as steel, entirely sharp enough to penetrate the tough material of a safety-suit if puffed from the blowgun with enough force.

All the craftsmen of the village became arms-makers. They drilled bamboo, polished the bore with abrasive-coated cord, fitted on the sights and tested their blowguns against the targets. Hundreds of darts were turned out for practice, and the most perfect were saved for the battlefield itself. The blowgunners began their drill, shooting from a prone position at targets as far as ten yards off, as great a range as amateurs could be expected to shoot with accuracy in the short time these had for practice.

To fire the blowgun, the dart was wrapped in a bit of silk of sunflower-stalk-fluff, so that it would fit tightly



into the tube. The puff that sent it on its way had to be sharp and hard. Achieving the proper slap of air took more practice even than aiming.

Hartford became every day a better horseman, or rather camelopardist. He in fact rejoiced in opportunities to leapfrog into his saddle, fit his feet and legs into the leather gambadoes, and go hailing off into the hills to recruit men and material. He carried with him the radio he'd salvaged from his safety suit, and could from time to time pick up First Regiment transmissions. The bitcher from his suit was useful in training large numbers of recruits on the blowgun range, and would be used when the Kansan guerrillas took the field against the troopers. He was picking up the language rapidly, now. He had to use Takeko's services as interpreter less and less. Her usefulness declined not a bit, though, as the girl became his first lieutenant in charge of details.

The band of expert puffgunners was joined by a company of scouts. These men and women skulked the hills afoot or astride camelopards, spying out the programs of the Regiment. Having no radio to maintain contact with Yamamura, each scout carried a pair of blabrigars, trained to report to a specific person in its home village when given a selected prompt-word.

Yamata-sah, the calligra-

pher, became a cartographer. He drew in jet-black *sumi* ink the contours of the mountains, greened in the stands of bamboo, drew blue streams and broad brown fields of sunflowers, till at last the map that filled the largest room in Yamamura was almost as real as the Kansan soil it reflected. Walking across this map in his *tabi*-stockinged feet, Hartford and the others of Kansas Intelligence would move toy troopers, made of wood like *kokeshi*-dolls, into the positions where the blabrigars reported patrols to be.

THE plan of battle of the Kansas forces was *yawarado*, the Gentle Way also called *judo*. They would wait till the enemy made a move they could use, then they'd trip him up by re-directing his own strength.

The move they most wanted the troopers to make was into the ravine that led toward the village of Yamamura, the pass under the *Daibutsu*, the huge bronze Buddha set there by their ancestors. In that ravine, under the gaze of the Lord of Boundless Light, the Kansas forces would either prevail against the invader and make him their brother by darts and sweet reason, or they would all die in the attempt.

The camelopards were stabled, ready as the steeds of any march-patrolling cavalry troop. The dartsmen, and those of the women who'd

shown skill in handling the blowgun, were trained and eager. The path through the pass had been memorized in infinite detail by every one of the guerrillas. The squad of sappers responsible for check-mating the troopers had prepared their levers, their blocks and skids. Nothing remained now but to coax the enemy into the battlefield of the Kansans' choosing.

"Take out what's left of the safety-suit," Hartford ordered one of his men. "Leave it here—" He stabbed a toe at the map they both stood on.

"Would it be well for me to leave beside the torn and broken suit signs of a fight?" asked the boy, Ito Jiro, son of Old Ito-san, the knife-maker. "If the troopers are angry, they will be careless."

"If only you believed in war, Jiro-chan, you'd make a fine warrior," Hartford grinned. "Do it your way, and hurry back."

Jiro placed the bait under the Regiment's nose early in the day, and returned to Yamamura. It was midday when a blabrigar flew in from one of the scouts posted to watch First Regiment's reaction. The bird prated its message into the ear of its receiver. Troopers, a band of fifty-odd, were scouring the hills to the west, following the camelopard-hoofprints left by Jiro. Aiding them in their search was the Regiment's veeto-plat-form, skimming, h o v e r i n g,

pouncing to pick up clues. "They're on the scent," Hartford said. He turned again to Ito Jiro, fleetest of the camelopard-riders. "Jiro-chan, lead them a chase that will bring them to the ravine no sooner than the Hour of the Dog. Be very cautious of the flying-thing; it can surprise you."

"Hai," Jiro said, bowing. "The Hour of the Dog they will call upon you near the *Daibutsu*." Ito-san the knife-maker watched his son run toward the stables, the boy as excited as though he were going to a festival rather than to face alone half a company of full-armed Axenites. The blabrigars that would ride out with Jito were trained to report to the father. It would be a long afternoon for the old man, Hartford thought.

There was much to do before the scarlet bird came winging in from Jiro's shoulder with the message that the trap was sprung. At the Hour of the Monkey, four hours before the troopers were to be in ambush, the first blabrigar flew in to report to Ito-san that the boy's mount was winded, the enemy was drawing nearer the ravine, and that Jiro was approaching the point of rendezvous where he would find a fresh camelopard. Hartford ordered out two youths to join Jiro there in his harassment of the foot-soldiers from Regiment.

"It is time we take up our positions," he told his band of

dartsmen. "Let us go in hope."

**KIWA-SAN**, Takeko's father, stepped forward to pronounce a benediction upon the little company. "The Enlightened One, speaking at Rajagriha, spake, saying: 'Remember one thing, O beloved disciples, that hatred cannot be silenced by lies but by truth.'"

The irregulars, heads bowed, replied, "Namu Amida Butsu," Glory to the Amida Buddha! Hartford, though his training as an Axenite trooper had left him as untouched by religions as by microbes, joined the prayer, feeling that a degree of celestial interest in their stratagem would not be unwelcome.

The camelopardists vaulted into their saddles, adjusted their legs in the bootlike gambadoes, and slapped the reins to head their *giraffu* toward the ravine where the endgame would be played. Hartford rode at the head of the band, Takeko beside him. The others were dispersed at wide interval, a precaution against the veeto-platform's swooping over the horizon to surprise them en route. As they left Yamamura, the women and children of the village were leaving from the other side, together with the men too old to go out with the guerrillas. Yamamura was being abandoned until the outcome of battle made itself known.

The canyon that led up the mountain's groin had once been the deep-cut bed of a stream. Collapse of over-beetling rock had formed a vault over the stream, which was consequently underground. Soil had filtered into the rocks, and bamboo had taken root. In result the lower ravine was a green enfilade hardly wider than a hallway, the walls on either side rising squarely from its floor. Well within the pass, set into the left-hand wall as one rode down from Yamamura, was a niche very like the *tokonoma* or honored alcove of a Kansan home. In this alcove, some fifty feet from the bottom of the pass, was set the great bronze image of Buddha, the *Daibutsu* of Kansan.

Further down, below the *Daibutsu*-niche, the canyon became irregular. Along either side, some ten feet from the floor, were ledges marking the fracture planes along which ancient avalanches had calved. It was from these shelves that the Kansans hoped to ambush the men from First Regiment. The narrowness of the ravine, and the overhang of willow trees—these growing in clefts of rock, fingering their roots down to the subterranean stream—were enough, Hartford prayed, to prevent the veeto-platform's pilot from spotting the Kansans lying in wait with their blowguns.

Hartford disposed his troops on the shelves, check-

ing to see that each man had a good field of fire and adequate cover. He glanced at the sun, the Kansan timepiece. It was between six and eight in the evening, he judged, the Hour of the Clock. He pressed his ear to the radio-receiver. Short-range, the safety-suit radio picked up only occasional orders from Axenite officers and non-coms. Twice Hartford caught the name, "Lieutenant Felix." He smiled, feeling mixed emotions. Felix had been his old Platoon Sergeant, and they would face each other in an hour or so as enemies. Very likely the fifty troopers chasing Ito Juro and his fellows toward the canyon included men of the Terrible Third Platoon, his old command. Hartford checked to see his bitcher worked and waited the arrival of the message-blabrigars with fresh news.

## XI

THE first bird arrived a few moments before the radio began coming in clear.

"Sakura," Hartford said, this being the prompt-word to which the blabrigar was trained to reply.

"Fifty men, sir; fifty men, sir; on the way, sir; on the way, sir," the bird chanted into Hartford's ear. He let the bird rest on his shoulder; it would have to fly back to the scout who'd sent it soon, to tell him to join the rest of

them at the ambush-point.

The sun was low in the sky. H-hour was near. The signals began coming closer-together. "Saw one Stinker off your left flank, Miller... Left flank-guard reporting, sir. That Gook took off due east. Blabrigar on his shoulder... Lieutenant Felix here. Anything on the right flank?... Nothing, sir... Keep moving, Lieutenant." This last voice was the colonel's.

Hartford frowned. If Nasty Nef had come out in person, the game would have to be played fast and dirty.

Hartford set his bitcher low. "Abunai yo!" he said to his guerrillas, sprawled out all along the ledge like figurines on a mantelpiece. "Be cautious. Shoot your dart and get behind something. From now on, be silent. The enemy is near."

Takeko spoke: "You mean, Lee-chan, that our brothers draw near." The other Kansans smiled. Some saluted, a gesture they'd observed among the Axenites they'd been spying upon for the past few days.

The first of the scouts came galloping up the gullet of the canyon. Without a sound he signaled his watching comrades, invisible above him. He made a circle with his hand, pointing up. That meant the Regiment's veeto-platform was scouting ahead of the approaching Axenites. The first man slapped his giraffu to

hasten it up the pass, past the Daibutsu. Two other scouts, the foxes urging on the hounds, came shouting into the canyon. Neither of them was Ito Jiro. As his name signified, Jiro was the youngest son of Ito-san, the knife-maker. He was the darling of the family. Where was he? Hartford worried.

The radio, no longer masked by the rocks, was filled with information. Hartford heard the veto-pilot reporting: "They're headed up the gulch past the big idol, sir," he said. "There's a village up there. That's where they're probably headed. What do you want me to do, sir?" The platform hovered over the canyon, unwilling to work its way into the jagged, bamboo-and-pine-prickly fissure.

"Keep in touch, Sky-Eye," Nef ordered. "We're coming right up."

"Felix here, sir," the lieutenant reported. "We've got one of the Gooks prisoner. He's just a kid. Doesn't seem to know a thing."

"Hold him till we get someone who talks Stinker," Nef said.

They got Jiro, Hartford thought. Damn.

**T**HE first of the troopers, an officer in the blue safety-suit, spearheaded the column. "Nothing in sight yet," Felix's voice reported. The officer signaled "Come on" with the sweep of his arm, and

the first squad of Axenites, dispersed as skirmishers, formed themselves into a file to enter the canyon. The veto-platform above kept the foliage pressed down with its jet of air, stirring dust that both improved concealment and threatened to trigger a sneeze from one of the ambushers.

Hartford peered cautiously over the edge of the shelf. He'd set his forces far enough back in the canyon that the entire Axenite column would be encased. "Sir, this is Felix," the radio said. "Do you agree, sir, that I should place one squad in reserve till the rest get through the gully?"

"Peel off one squad and stay with it, Felix," Nef said.

Felix's voice again: "Sir, it was our Lieutenant Hartford that the Gooks got. I'd like to go in early."

"Very well, Felix. Miller, hold your squad where it is. Disperse them well, and wait my order before bringing them into the ditch. Confirm."

"Done and done, sir," Miller snapped.

The first two dozen troopers were in the canyon now, half the Axenite force. Colonel Nef had shown the good sense to don an ordinary blue safety-suit; his scarlet command-suit would have made him a splendid target. Another squad entered, their Dardick-rifles held at the ready. This would have to be quick, Hartford thought, or he'd lose

his entire corps at their first volley. He raised his hand, a signal visible only to Takeko. She cupped her hands around her mouth and whistled the call of the nightingale, "Ho-o-kekyo...kekyo!"

Before the echoed notes had died, the darts had found their targets.

The radio was a clutter of undisciplined Damn's, cries of "I've been hit!" One trooper, quicker than the rest, caught sight of a Kansan. He raised his rifle and purred out a stream of Dardick-pellets. Yoritomo, apprentice to the paper-maker, tumbled over the lip of the ledge, his blowpipe falling with him like a jack-straw. There was a babble on the radio. Nef overrode all other circuits to command: "At ease! Rake the ledges with sustained fire."

The canyon was blasted with a confetti of metal and spalled rock as the troopers hosed the shelves with bullets.

The angle made aiming impossible. But by luck and the intensity of the barrage another man, the carpenter's son, had toppled to his death.

"Sky-Eye! Get your butt down here!" Nef bellowed. "Decontamination Team! Bring the vehicle to the mouth of the canyon. We've got men septic." He tongued-on his bitcher and bellowed at the troopers. "On the double, through the ditch."

"Yuke!" Hartford shouted

to the men far up the wall, in the niche that held the Daibutsu. "Go!"

THE sappers at the back of the giant bronze statue bent to their levers. The tons of metal scooted slowly forward, hit the fat-smear edge of the shelf. As quietly as a man rocking forward in prayer, the Daibutsu dropped head-down into the ravine. It struck the bottom with the sound of a great gong, and rocked, unshattered, plugging the throat of the canyon, standing as a dam. The hands of the Enlightened One were held in the positions of Protection and of Giving; His face bore still a quiet smile. About the head of the image a fountain of water burst, squeezed up from the stream below. "*Namu Amida Butsu!*" Takeko said, cuddled against Hartford, staring down.

"Keep down," he said. He lifted his suit-radio and flicked on the transmission-switch. "This is Lee Hartford, late of the First Regiment," he announced. "The safety-suits of most of you have been breached. There is not room for more than three of you in the Decontamination Vehicle. You are not septic. I repeat: you have not been contaminated. Kansas is as safe for you as the Barracks, or Titan, or the M'Bwene planets, or in the cells at Luna. You do not need your safety-suits on Kansas."

"Find that man and gun the traitor down," Nef's voice demanded from the speaker on his suit.

"I am coming out unarmed," Hartford radioed.

"Fire the moment you see him," Nef said. One of the officers had his Dardick-pistol drawn, his eyes traversing the canyon walls.

"No, sir!" Felix's voice snapped from his bitcher. "You can't shoot the man till he's had a chance to speak."

"Go to the rear at once, Private Felix," Nef bellowed.

Felix pointed his handgun toward Nef. "No, sir," he replied. "Hartford was my C.O., and an honest man. I'll hear him before I see him killed. Or by my life, sir, I'll kill you after him."

"This is treason," Nef said.

"Drop your pistol, sir, or I'll have to try to shoot it from your hand. Excuse me, sir," Felix said.

Nef's gun dropped.

"You all hear me?" Felix bitched. "Hear me out there, Miller?" There was a chorus of "Roger!" Felix went on: "I'm going to unclam my helmet, troopers. I'm going to take off my safety-suit. That's how much I trust Lee Hartford, troopers. The man who tries to stop Hartford better begin with me." Felix opened his helmet, removed it, and placed it on the rocks beside him. He went up to drink from the fountain that sparkled about the head of the Daibut-

su, cupping his hands. "It's good water, men," he said. "Come on down, Hartford," he shouted through the clear night air.

LEE Hartford twisted over the edge of the shelf, held himself by his finger-tips, and dropped. He stood before his old comrades in arms dressed as a country Kansan. His head bore only a stubble of hair, and a scarlet blabrigar came down to settle familiarly on his shoulder. "I caused your suits to be breached for good reason," he said, speaking into the bitcher he'd recovered from his safety-suit. "If any of you has a sore backside because of the darts my men sent at you, please accept my apologies." Two more Axenites removed their helmets, and stood grinning uncertainly at Hartford. "I have lived on Kansas for two weeks, living like a native. I've breathed Kansan air, eaten their wonderful food and even kissed one of their girls." There was a murmur of laughter. "I'm as healthy as ever I was inside the Barracks," Hartford said. "And I'm a good deal happier."

There was louder laughter among the Axenites, and more helmets opened. Hartford turned to look behind him. Takeko was hanging by her fingertips off the shelf, trying to work up the courage to drop. He went over to stand below her. "Fall to me, dar-

ling," he said. "Fall into my arms."

"I hear, *shujin*, and obey," Takeko squeaked, and dropped.

When Hartford released Takeko and turned to face the troopers, every helmet but Nef's was opened. Half a dozen of the men had already stripped to their Class B's. They had their faces tilted into the wind that was sweeping up the gullet of the canyon, smelling for the first time in their lives the scents of open nature, the spice of green life in the air. They were seeing the Kansas sky; a mosaic of stars, unfiltered by helmets. They were breathing air not humid with their own perspiration. Holding Takeko's hand in his, Hartford walked up to Felix. "You saved the day, old buddy," he said.

There was the cough of a tapped-off Dardick-round.

Felix fell. Colonel Nef, his pistol held at the hip, tilted it toward Hartford. He looked startled for a moment, then dropped the pistol. In his wrist were three blowgun-darts. Clustered across his chest were half a dozen more. Hartford waved at the Kansans on the ledge. "*Arigato!*" he shouted, and told them to come down.

Two men had died in the engagement: Yoritomo the papermaker and Sannosuke the carpenter's son. Felix's thighbone had been broken by Nef's

shot; and Colonel Nef's right wrist would require attention. A medical officer had been sent for from the Barracks to set Felix's leg. The dead men were carried on litters up to the shelves and around the fallen Daibutsu to the village. Hartford splinted his friend's broken leg. "What now, Hartford?" Felix asked.

"I suggest that you all become guests in Yamamura."

"Done and done," Felix said.

Takeko came up to lay a bunch of flowers on his chest. "They smell sweet," she said. "Courage such as yours smells sweet in the nostrils of heaven."

"Thank you, Ma'am," Felix said. He turned his head to follow the girl as she took a second handful of flowers to place it beside the fountain that jetted about the head-standing Daibutsu. "I can see where this will be a popular planet to do duty on, Lieutenant," he said. "What you discovered here will pretty well wipe out the Brotherhood."

"You're right," Hartford said. "The Brotherhood is doomed."

They watched as Takeko knelt before the inverted image. "*Namu. Amida Butsu,*" she said. "All men are the same in the sight of Amida, the Lord of Boundless Light."

"Maybe I'm wrong, Lieutenant," Felix said. "Maybe the Brotherhood just got started."

END





# UNCLE SAM'S TIME MACHINE

BY THEODORE STURGEON

**I**N the great gray Groff Conklin's introduction to my Funk & Wagnalls collection *A Way Home*, he mentions my "beautiful black-banged wife." This remarkable lady, while operating a meticulous household and beautifully raising four kids, two fish and a dog, writes *haiku*, does Japanese calligraphy and, having trimmed and suppld herself at ballet, paints in oils. Needing therefore some spare time activity, she became a den mother, and every week, for an hour, my placid studio becomes a cacophonous cave and we are all up to here in Cub Scouts.

Now a Cub Scout den in a spread-out community like ours calls for a surprising de-

gree of synchronized logistics. (Anybody who forgets the refreshments will never do it again.) The boys arrive from different directions and different schools and are picked up by volunteer distaff-type chauffeurs with worries of their own; so above all, there has to be timing.

It happened one day recently that at some point during the rituals, the clock stopped. The only Cub with a wristwatch that was running had both of its hands off and skating around under the crystal. There came a great wail of temporal disorientation, to which I responded by invading the sanctum, switching on my all-wave radio, tuning it to 2.5 megacycles and flood-

ing the room with a pure concert A, which was punctuated by a series of sharp clicks at one-second intervals. An awed and attentive silence fell, and in a moment a man's voice remarked: "National Bureau of Standards, WWV. When the tone returns, the time will be . . . five five P.M., Eastern Standard Time." The tone returned and the voice said, "Five five P.M." The clock was set, order restored, and we returned, they to their B-P inspirationals, I to my baby-sitting.

Aside from a warm feeling of having saved the day, I did not realize that I had made a major magic until the phone began to ring that evening, and one after another of the participants and/or their parents began calling to find out just what was that radio station I had evoked. Well, WWV and I have been friends and associates for at least 15 years now, and I was happy to say so. I thought I knew a good deal about its many functions and uses, and it occurred to me that you might like to know something about it too. So I wrote to the station and asked for some material.

**P**PROMPTLY and with the greatest courtesy, they sent it. Brother! It was like the discovery after expert years of pulling pigtailed that there's *much* more you can do with girls. I'm now a good deal

more astonished and impressed by WWV than are the Scouts of Den 2, Pack 34.

As you may know, I jangle a bit of guitar, and it's nice to have a readily available concert A for tuning up the gourd. Since WWV is on the air 24 hours a day, it doesn't matter how late the party gets. It's also nice to be able to find out what time it is without having to listen to the yowling of some catamount backed up by a piano imitating a loose skid-chain, followed by two commercials. I was aware as well that WWV broadcasts on a number of different frequencies and is kept very accurately on them, so that if you like to have your tuning dial telling the truth, you can calibrate it against WWV's signal. Or say someone wants to sell you a three or four-band receiver, and you want to know if the tuning is accurate on all of them, and not one or two only; WWV will tell you about that right now and with no argument.

I knew also, or could deduce, that WWV provided a standard for manufacturers of clocks and watches, of musical instruments, of electronic components like signal generators and vacuum tube voltmeters and the like, as well as radio receivers. And of course radio hams and Signal Corpsmen and ship-to-shore telephone maintenance personnel would find a use for such a standard. And symphony or-

chestras. And radio-TV networks, who must synchronize their equipment across three, or five, or eight time zones. And Western Union's radio-relay systems. And ships and planes, whose navigators taking star or sun-shots must have accurate time measurement in order to calculate their positions. The more you think of it, the more uses you can dream up for such a service, and a lot of them are above and beyond mere convenience.

When I began wondering about WWV, and while I was waiting for their reply to my query (which wasn't long: they were as prompt as they were helpful) I began listening a little more attentively to it. I noticed that part of the time they broadcast another, higher note than the A-440, that sometimes they kept the one-second tick but dropped the audio tone altogether, that occasionally the tick would be tick-tick instead, that at the time of the voice announcement the audio tone would do a dit-dah bit in Morse code, that once in a while there would be a minute or so of a sound like a faulty electric shaver (my five-year-old says it sounds like jingle-bells, and in a way she's right) and that every now and then the whole shebang goes off the air for a few minutes.

Then came the mailing from WWV, and I'm going to have a heck of a job boiling it down

into the available space. How so very much can be packed into a radio program consisting of some toots and a tick simply stretches belief. In a way it reminds me of a remarkable biologist called Noel Monkman, who once organized an expedition to investigate the crater of an extinct volcano, traveled and climbed for days to get there, had himself lowered a hundred-odd feet down into the hole and found nothing there but scummy water. He yelled up for his companions to dump out and wash a thermos flash and lower it to him. He filled it and corked it, and with less than a pint of smelly liquid to show for his trouble, he wrote a book and made a full-length movie from his observations of it. To me, WWV's toot and tick offer just that sort of marvelous microcosm.

The best way to get an overall idea of how much information is packed into this slender hiccuping thread of sound is to see what they started with and what they added to it. As you read, pay special attention to the remarks on accuracy, because they build up to one of the darnedest deadpan punchlines I have yet encountered.

**I**N March 1923, the National Bureau of Standards began transmitting, for use by the public, radio signals of definite announced frequency, to help with the standardization

of meters and radio gear. The station: WWV. The place: Washington, D.C. The signals were accurate in frequency to about 5 parts in 100,000, and were transmitted for a while each month in the range 125 to 7200 kc.

In January 1931 a new transmitter was set up at College Park, Md., and an extended service was begun, featuring a crystal-controlled broadcast on 5000 kc which was accurate to 3 parts in a million.

The move to Beltsville, Md., came in 1932, and there WWV lives and works to this day. The new transmitter had accuracy of one part in 5,000,000. In 1933 a high-power transmitter was installed, and in 1934 they added frequencies of 10 and 15 megacycles. In 1935 a modulation frequency of one kc was added, and in 1937 they began broadcasting the standard musical pitch, A/440, which they sent out on 5 megacycles. In July '38 came the ticks, or seconds-pulses. In 1939 the station went on a 24-hour schedule, and accuracy was increased to one part in 10 million. Upon which the whole thing burned down.

That was on November 6, 1940. Five days later WWV was back on the air, with reduced service, but anyway, back on the air, with one kilowatt of power on 5000 kc. By March 1941 the "ticks" and the musical A/440 were back, and in December of the same year the 15,000 kilocycle car-

rier was restored at one kilowatt.

The station was moved to a new site in Beltsville in 1943, with high power operation on 5, 10 and 15 mc. On January 9, 1946, after inclusion of broadcasts on 2.5, 20, and 25 mc, radio propagation disturbance warning notices were added. And now we can pause and look at what they had achieved, because it was at this point that they served the public with the six main functions which they carry out to this day.

First of all, there were the six broadcast frequency standards mentioned above; when you calibrated your equipment to these, you knew you were right. Then there was the time, and the time *intervals*; you could count on there being just about exactly one second between those ticks. Then there was the concert A. This was 440 cycles per second and not 439-point-any-number-of-nines. They were also sending (I forgot to mention) a 4000-cycle audio note, for an intermediate frequency check. They were actually announcing the time in Morse, as well as marking it, and finally, there were these radio propagation notices.

Here's the way these work. The Bureau of Standards has a propagation laboratory at Ft. Belvoir, Va., and prepares short-term forecasts on the broadcasting conditions currently existing on North At-

lantic radio paths, such as Washington to London or New York to Berlin. These forecasts are based on information secured from a worldwide network of geophysical and solar observations, balloon soundings, reports on short-wave reception and the like, and are issued four times a day. WWV, using the audio tone they happen to be broadcasting at the time, gives this material in Morse code. It is scheduled for 19.5 and 49.5 minutes past each hour; that is to say, the forecasts are corrected four times a day and sent out twice each hour. The code takes the form of a letter and a digit. "W" means "disturbed" and is used with numbers 1 to 4, which signify degrees of mush from "useless" to "poor-to-fair". "U" is "unsettled" and is used with the numeral 5. "N" means "normal" and is followed by numerals 6 to 9, signifying conditions varying from fair-to-good all the way up to excellent. This kind of information, of course, is vital for radio-telephony, short-wave links and all such traffic, and enables overseas operators to decide when to hold and when to send transmissions. And in this letter-and-number system is even more information; for if conditions are expected to worsen, the number won't belong to the letter; that is, "N4" means "It's okay now but it's going to get foggy pretty quick." And "U-8"

would mean "Not so hot just now, but it's clearing up."

SO back to our history. In November 1948 the Pacific began to get the same kind of service via the sister station WWVH at Maui in Hawaii. And in January 1950, the 4000-cycle audio note was discontinued and a 600-cycle note substituted to alternate with the A/440. Why 600? So that power-plants half around the world could have a really accurate check of the 60-cycle alternation of their output—that good old 60 cycles that drives your four-dollar electric clock and keeps it to an accuracy almost undreamed of in the days of springs and pendulums and balance-wheels. 600 cycles is a useful middle-frequency note in itself, and it's a multiple of your house-current.

During 1956 (you've been watching this?) the broadcasts were refined from one part in 50 million to one part in 100 million. In addition, the stability of the frequencies broadcast was increased to about (that "about" is straight from the material BuStandards sent me) one part in a billion at WWV and to 5 parts in a billion at WWVH.

Also in 1956 a change was made in the manner of sending tones. The audio was reduced from four to three minutes of each five, and in addition a silent period was introduced: the WWV carriers are

removed from the air altogether for four minutes, beginning at 45 minutes, 15 seconds after each hour. I haven't been able to ascertain just why, but it's easy to imagine certain electronic watch-dog or control equipment which might be precisely turned off and on or modulated by the removal and return of these signals.

The way the time announcements are made, and their anatomy, are particularly fascinating. The first thing you notice about a WWV signal is the *tick—tick*—of the seconds pulse. Listen very carefully and you'll notice that the last second of each minute has no tick; it's omitted. The first second of the next minute is marked by two ticks a tenth of a second apart; the first of these marks the beginning of the second. And in a moment you'll notice that the tone is not, as it first seemed, continuous, with the "tick" overlaying it. The tone actually stops to admit the tick, or pulse, for all of one one-hundredth of a second. And the tick isn't a tick at all! It's a tiny piece of a 1000-cycle note, to be exact, five cycles. This takes (n a t c h) five thousandths of a second. Then there's a *long* pause of two and a half hundredths of a second, and the audio tone resumes. If you think that's a lot to be going on within a tick of time, stick around: there's *lots* more that can be packed in.

As quoted in the Cub Scout anecdote, the voice announcement is made twice during the last ten seconds of each five-minute period. You will also hear the audio tone performing some Morse. This is also the time, but while the voice gives Eastern Standard time, the Morse gives Universal Time (UT) the reference of which is the zero meridian. This affords scientists and technologists and saucer-watchers a chance to make simultaneous measurements thousands of miles apart without calculating time zones.

**A**ND now we come to the International Geophysical Year, and a chance to shovel some more information into the tick and the toot. The IGY began in 1957, and something called International World Day Service was instituted. This IWDS notifies all interested parties that some significant geophysical event is taking place—a big magnetic storm, an outstanding auroral display, or a significant increase in cosmic ray activity. The alert is broadcast first by WWV at 1604.5 UT, and by WWVH at 1714.4 UT. (How'd you like to arrange to meet your girl at seventeen-fourteen and four tenths?) The code for an alert, in slow Morse, is AGI AAAA. Now, if the event turns out to be of really great importance, so that observers and experimenters should really get to

work on it, a Special World Interval is declared. The code for this is AGI followed by three extra-long dashes.

And now we come to 1961, when WWV seems to have sworn off all the crude stuff and decided to really hone it fine. First of all they brought the stability to one part in  $10^{10}$ , which was called one part in ten billion when you were a kid. Then they retarded (as of Jan. 1, 1961) the whole schedule by 5 microseconds, to bring it into line with other standardized frequency broadcasting stations throughout the world. Then, without dropping anything, they grafted on a time signal which will, if you like, and if you know how to grab it, inform you what second of what minute of what hour of what day of the year you are listening to. It will do this *six hundred times every hour*. And this is the "jingle bells" my youngster mentioned. It occurs for a solid minute immediately following the cessation of the audio tone, ten times during the hour. The information is in a binary code, and transmits 36 "bits" within 100 pulses within 1 second. In binary numbers, which you will recall are all 1's and 0's, it gives first the number of the second, then what minute we're in, then the number of the hour (UT), then the number (total) of the day since the year began. The transmis-

sion also contains the binary technicalities of 10-per-second index markers and a one-per-second reference marker. The whole message is made of thin slices of a 100-cycle tone. The 0 pulse is 2 cycles of the tone, and the 1 pulse is 6 cycles of the tone. This affords 36 bits in a second, and, take my word for it as I take BuStandard's, there are four bits left over. They are trying to figure out what to do with these. Maybe they'll add the number of the year (like 62) or perhaps the station identification. Or maybe some micromadison-avenue minibrain will figure out how to make a millibuck selling it as commercial spots.

And now we come to BuStandard's one-word punchline—the end of one of the reports they sent me about WWV (which started in 1923 establishing frequency standards accurate to about 5 parts in 100,000, and now stabilize to one part in ten billion):

"Development work is underway to increase (1) the effectiveness of the seconds pulse, (2) power in the time pulses, (3) area served by standard frequency broadcasts and (4) accuracy." **END**

I wish to acknowledge the kindness and courtesy granted me in the preparation of this article by Mr. A. H. Morgan, Chief of the Radio Standards Service, and Mr. James F. Brockman of the Radio Standards Laboratory, U.S. Dept. of Commerce, National Bureau of Standards, Boulder, Colorado.

It was dirty work, but it would make him a man.

And kids had a right to grow up — some of them!

# THE RECRUIT

BY BRYCE WALTON

ILLUSTRATED BY SCHELING

**W**AYNE, unseen, sneered down from the head of the stairs.

The old man with his thick neck, thick cigar, evening highball, potgut and bald head without a brain in it. His slim mother with nervously polite smiles and voice fluttering, assuring the old man by her frailty that he was big in the world. They were squareheads one and all, marking moron time in a gray dream. Man, was he glad to break out.

The old man said, "He'll be okay. Let him alone."

"But he won't eat. Just lies there all the time."

"Hell," the old man said. "Sixteen's a bad time. School over, waiting for the draft and all. He's in between. It's

rough."

Mother clasped her forearms and shook her head once slowly.

"We got to let him go, Eva. It's a dangerous time. You got to remember about all these dangerous repressed impulses piling up with nowhere to go, like they say. You read the books."

"But he's unhappy."

"Are we specialists? That's the Youth Board's headache, ain't it? What do we know about adolescent trauma and like that? Now get dressed or we'll be late."

Wayne watched the ritual, grinning. He listened to their purposeless noises, their blabbing and yakking as if they had something to say. Blab-



blab about the same old bones, and end up chewing them in the same old ways. Then they begin all over again. A freak sideshow all the way to nowhere. Squareheads going around either unconscious or with eyes looking dead from the millennium in the office waiting to retire into limbo.

How come he'd been stuck with parental images like that? One thing—when he was jockeying a rocket to Mars or maybe firing the pants off Asiatic reds in some steamy gone jungle paradise, he'd forget his punkie origins in teeveeland.

But the old man was right on for once about the dangerous repressed impulses. Wayne had heard about it often enough. Anyway there was no doubt about it when every move he made was a restrained explosion. So he'd waited in his room, and it wasn't easy sweating it out alone waiting for the break-out call from HQ.

"Well, dear, if you say so," Mother said, with the old resigned sigh that must make the old man feel like Superman with a beerbelly.

They heard Wayne slouching loosely down the stairs and looked up.

"Relax," Wayne said. "You're not going anywhere tonight."

"What, son?" his old man said uneasily. "Sure we are. We're going to the movies."

He could feel them watch-

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ing him, waiting; and yet still he didn't answer. Somewhere out in suburban grayness a dog barked, then was silent.

"Okay, go," Wayne said. "If you wanta walk. I'm taking the family boltbucket."

"But we promised the Clem-  
ons, dear," his mother said.

"Hell," Wayne said, grinning straight into the old man. "I just got my draft call."

He saw the old man's Adam's apple move. "Oh, my dear boy," Mother cried out.

"So gimme the keys," Wayne said. The old man handed the keys over. His understanding smile was strained, and fear flicked in his sagging eyes.

"Do be careful, dear," his mother said. She ran toward him as he laughed and shut the door on her. He was still laughing as he whoomed the Olds between the pale dead glow of houses and roared up the ramp onto the Freeway. Ahead was the promising glitter of adventure-calling neon, and he looked up at the high skies of night and his eyes sailed the glaring wonders of escape.

**H**E burned off some rubber finding a slot in the parklot. He strode under a sign reading *Public Youth Center No. 947* and walked casually to the reception desk, where a thin man with sergeant's stripes and a pansy haircut looked out of a pile of paperwork.

"Where you think you're going, my pretty lad?"

Wayne grinned down. "Higher I hope than a type-writer jockey."

"Well," the sergeant said. "How tough we are this evening. You have a pass, killer?"

"Wayne Seton. Draft call."

"Oh." The sergeant checked his name off a roster and nodded. He wrote on a slip of paper, handed the pass to Wayne. "Go to the Armory and check out whatever your lusting little heart desires. Then report to Captain Jack, room 307."

"Thanks, sarge dear," Wayne said and took the elevator up to the Armory.

A tired fat corporal with a naked head blinked up at tall Wayne. Finally he said, "So make up your mind, bud. Think you're the only kid breaking out tonight?"

"Hold your teeth, pop," Wayne said, coolly and slowly lighting a cigarette. "I've decided."

The corporal's little eyes studied Wayne with malicious amusement. "Take it from a vet, bud. Sooner you go the better. It's a big city and you're starting late. You can get a cat, not a mouse, and some babes are clever hellcats in a dark alley."

"You must be a genius," Wayne said. "A corporal with no hair and still a counterboy. I'm impressed. I'm all ears, Dad."

The corporal sighed wear-

ily. "You can get that balloon head ventilated, bud, and good."

Wayne's mouth twitched. He leaned across the counter toward the shelves and racks of weapons. "I'll remember that crack when I get my commission." He blew smoke in the corporal's face. "Bring me a Smith and Wesson .38, shoulder holster with spring-clip. And throw in a Skelly switchblade for kicks—the six-inch disguised job with the double springs."

The corporal waddled back with the revolver and the switchblade disguised in a leather comb case. He checked them on a receipt ledger, while Wayne examined the weapons, broke open the revolver, twirled the cylinder and pushed cartridges into the waiting chamber. He slipped the knife from the comb case, flicked open the blade and stared at its gleam in the buttery light as his mouth went dry and the refracted incandescence of it trickled on his brain like melted ice, exciting and scary.

He removed his leather jacket. He slung the holster under his left armpit and tested the spring clip release several times, feeling the way the serrated butt dropped into his wet palm. He put his jacket back on and the switchblade case in his pocket. He walked toward the elevator and didn't look back as the corporal said,

"Good luck, tiger."

Captain Jack moved massively. The big stone-walled office, alive with stuffed lion and tiger and gunracks, seemed to grow smaller. Captain Jack crossed black-booted legs and whacked a cane at the floor. It had a head shaped like a grinning bear.

Wayne felt the assured smile die on his face. Something seemed to shrink him. If he didn't watch himself he'd begin feeling like a pea among bowling balls.

Contemptuously amused little eyes glittered at Wayne from a shaggy head. Shoulders hunched like stuffed seabags.

"Wayne Seton," said Captain Jack as if he were discussing something in a bug collection. "Well, well, you're really fired up aren't you? Really going out to eat 'em. Right, punk?"

"Yes, sir," Wayne said. He ran wet hands down the sides of his chinos. His legs seemed sheathed in lead as he bit inwardly at shrinking fear the way a dog snaps at a wound. You big overblown son, he thought, I'll show you but good who is a punk. They made a guy wait and sweat until he screamed. They kept a guy on the fire until desire leaped in him, ran and billowed and roared until his brain was filled with it. But that wasn't enough. If this

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muscle-bound creep was such a big boy, what was he doing holding down a desk?

"Well, this is it, punk. You go the distance or start a butterfly collection."

The cane darted up. A blade snicked from the end and stopped an inch from Wayne's nose. He jerked up a shaky hand involuntarily and clamped a knuckle-ridged gag to his gasping mouth.

Captain Jack chuckled. "All right, superboy." He handed Wayne his passcard. "Curfew's off, punk, for 6 hours. You got 6 hours to make out."

"Yes, sir."

"Your beast is primed and waiting at the Four Aces Club on the West Side. Know where that is, punk?"

"No, sir, but I'll find it fast."

"Sure you will, punk," smiled Captain Jack. "She'll be wearing yellow slacks and a red shirt. Black hair, a cute trick. She's with a hefty psycho who eats punks for breakfast. He's butchered five people. They're both on top of the Undesirable list, Seton. They got to go and they're your key to the stars."

"Yes, sir," Wayne said.

"So run along and make out, punk," grinned Captain Jack.

A copcar stopped Wayne as he started over the bridge, out of bright respectable neon into the murky westside slum over the river.

Wayne waved the pass card, signed by Captain Jack, under the cop's quivering nose. The cop shivered and stepped back and waved him on. The Olds roared over the bridge as the night's rain blew away.

The air through the open window was chill and damp coming from Slumville, but Wayne felt a cold that wasn't of the night or the wind. He turned off into a rat's warren of the inferiors. Lights turned pale, secretive and sparse, the uncared-for streets became rough with pitted potholes, narrow and winding and humid with wet unpleasant smells. Wayne's fearful exhilaration increased as he cruised with bated breath through the dark mazes of streets and rickety tenements crawling with the shadows of mysterious promise.

He found the alley, dark, a gloom-dripping tunnel. He drove cautiously into it and rolled along, watching. His belly ached with expectancy as he spotted the sick-looking dab of neon wanly sparkling.

#### *FOUR ACES CLUB*

He parked across the alley. He got out and stood in shadows, digging the sultry beat of a combo, the wild pulse of drums and spinning brass filtering through windows painted black.

He breathed deep, started over, ducked back. A stewbum weaved out of a bank of garbage cans, humming to him-

self, pulling at a rainsoaked shirt clinging to a pale stick body. He reminded Wayne of a slim grub balanced on one end.

The stewbum stumbled. His bearded face in dim breaking moonlight had a dirty, greenish tinge as he sensed Wayne there. He turned in a grotesque uncoordinated jiggling and his eyes were wide with terror and doom.

"I gotta hide, kid. They're on me."

Wayne's chest rose and his hands curled.

The bum's fingers drew at the air like white talons.

"Help me, kid."

He turned with a scratchy cry and retreated before the sudden blast of headlights from a Cad bulleting into the alley. The Cad rushed past Wayne and he felt the engine-hot fumes against his legs. Tires squealed. The Cad stopped and a teener in black jacket jumped out and crouched as he began stalking the old rummy.

"This is him! This is him all right," the teener yelled, and one hand came up swinging a baseball bat.

A head bobbed out of the Cad window and giggled.

The fumble-footed rummy tried to run and plopped on wet pavement. The teener moved in, while a faint odor of burnt rubber hovered in the air as the Cad cruised in a slow follow-up.

Wayne's breath quickened

as he watched, feeling somehow blank wonder at finding himself there, free and breaking out at last with no curfew and no law but his own. He felt as though he couldn't stop anything. Living seemed directionless, but he still would go with it regardless, until something dropped off or blew to hell like a hot lightbulb. He held his breath, waiting. His body was tensed and rigid as he moved in spirit with the hunting teener, an omniscient shadow with a hunting license and a ghetto jungle twenty miles deep.

The crawling stewbum screamed as the baseball bat whacked. The teener laughed. Wayne wanted to shout. He opened his mouth, but the yell clogged up somewhere, so that he remained soundless yet with his mouth still open as he heard the payoff thuds where the useless wino curled up with stick arms over his rheumy face.

The teener laughed, tossed the bat away and began jumping up and down with his hobnailed, mail-order air force boots. Then he ran into the Cad. A hootch bottle soared out, made a brittle tink-tink of falling glass.

"Go, man!"

The Cad wooshed by. It made a sort of hollow sucking noise as it bounced over the old man twice. Then the finlights diminished like bright wind-blown sparks.

Wayne walked over and  
**THE RECRUIT**

sneered down at the human garbage lying in scummed rain pools. The smell of raw violence, the scent of blood, made his heart thump like a trapped rubber ball in a cage.

He hurried into the Four Aces, drawn by an exhilarating vision...and pursued by the hollow haunting fears of his own desires.

**H**E walked through the wavering haze of smoke and liquored dizziness and stood until his eyes learned the dark. He spotted her red shirt and yellow legs over in the corner above a murky lighted table.

He walked toward her, watching her little subhuman pixie face lift. The eyes widened with exciting terror, turned even paler behind a red slash of sensuous mouth. Briefed and waiting, primed and eager for running, she recognized her pursuer at once. He sat at a table near her, watching and grinning and seeing her squirm.

She sat in that slightly baffled, fearful and uncomprehending attitude of being motionless, as though they were all actors performing in a weirdo drama being staged in that smoky thick-aired dive.

Wayne smiled with wry superiority at the redheaded psycho in a dirty T-shirt, a big bruiser with a gorilla face. He was tussling his mouse heavy.

"What's yours, teener?" the slug-faced waiter asked.

"Bring me a Crusher, bud-dy-roo," Wayne said, and flashed his pass card.

"Sure, teener."

Red nuzzled the mouse's neck and made drooly noises. Wayne watched and fed on the promising terror and helplessness of her hunted face. She sat rigid, eyes fixed on Wayne like balls of frozen glass.

Red looked up and stared straight at Wayne with eyes like black buttons imbedded in the waxlike skin of his face. Then he grinned all on one side. One huge hand scratched across the wet table top like a furious cat's.

Wayne returned the challenging move but felt a nervous twitch jerk at his lips. A numbness covered his brain like a film as he concentrated on staring down Red the psycho. But Red kept looking, his eyes bright but dead. Then he began struggling it up again with the scared little mouse.

The waiter sat the Crusher down. Wayne signed a chit; tonight he was in the pay of the state.

"What else, teener?"

"One thing. Fade."

"Sure, teener," the waiter said, his breathy words dripping like syrup.

Wayne drank. Liquored heat dripped into his stomach. Fire tickled his veins, became hot wire twisting in his head.

He drank again and forced out a shaky breath. The jazz beat thumped fast and muted brass moaned. Drumpulse, stabbing trumpet raped the air. Tension mounted as Wayne watched her pale throat convulsing, the white eyelids fluttering. Red fingered at her legs and salivated at her throat, glancing now and then at Wayne, baiting him good.

"Okay, you creep," Wayne said.

He stood up and started through the haze. The psycho leaped and a table crashed. Wayne's .38 dropped from its spring-clip holster and the blast filled the room. The psycho screamed and stumbled toward the door holding something in. The mouse darted by, eluded Wayne's grasp and was out the door.

Wayne went out after her in a laughing frenzy of release. He felt the cold strange breath of moist air on his sweating skin as he sprinted down the alley into a wind full of blowing wet.

He ran laughing under the crazy starlight and glimpsed her now and then, fading in and out of shadows, jumping, crawling, running with the life-or-death animation of a wild deer.

Up and down alleys, a rat's maze. A rabbit run. Across vacant lots. Through shattered tenement ruins. Over a fence. There she was, falling, sliding down a brick shute.

He gained. He moved up.



His labored breath pumped more fire. And her scream was a rejuvenation hypo in his blood.

**S**HE quivered above him on the stoop, panting, her eyes afire with terror.

"You, baby," Wayne gasped. "I gotcha."

She backed into darkness, up there against the sagging tenement wall, her arms out and poised like crippled wings. Wayne crept up. She gave a squeaking sob, turned, ran. Wayne leaped into gloom. Wood cracked. He clambered over rotten lumber. The doorway sagged and he hesitated in the musty dark. A few feet away was the sound of loose trickling plaster, a whimpering whine.

"No use running," Wayne said. "Go loose. Give, baby. Give now."

She scurried up sagging stairs. Wayne laughed and dug up after her, feeling his way through debris. Dim moonlight filtered through a sagging stairway from a shattered skylight three floors up. The mouse's shadow floated ahead.

He started up. The entire stair structure canted sickeningly. A railing ripped and he nearly went with it back down to the first floor. He heard a scream as rotten boards crumbled and dust exploded from cracks. A rat ran past Wayne and fell into space. He burst into the third-

floor hallway and saw her half-falling through a door under the jagged skylight.

Wayne took his time. He knew how she felt waiting in there, listening to his creeping, implacable footfalls.

Then he yelled and slammed open the door.

Dust and stench, filth so awful it made nothing of the dust. In the corner he saw something hardly to be called a bed. More like a nest. A dirty, lumpy pile of torn mattress, felt, excelsior, shredded newspapers and rags. It seemed to crawl a little under the moon-streaming skylight.

She crouched in the corner panting. He took his time moving in. He snickered as he flashed the switchblade and circled it like a serpent's tongue. He watched what was left of her nerves go to pieces like rotten cloth.

"Do it quick, hunter," she whispered. "Please do it quick."

"What's that, baby?"

"I'm tired running. Kill me first. Beat me after. They won't know the difference."

"I'm gonna bruise and beat you," he said.

"Kill me first," she begged. "I don't want—" She began to cry. She cried right up in his face, her wide eyes unblinking, and her mouth open.

"You got bad blood, baby," he snarled. He laughed but it didn't sound like him and something was wrong with his belly. It was knotting up.

by Bryce Walton



"Bad, I know! So get it over with, please. Hurry, hurry."

She was small and white and quivering. She moaned but kept staring up at him.

He ripped off his rivet-studded belt and swung once, then groaned and shuffled away from her.

He kept backing toward the door. She crawled after him, begging and clutching with both arms as she wriggled forward on her knees.

"Don't run. Please. Kill me! It'll be someone else if you don't. Oh, God, I'm so tired waiting and running!"

"I can't," he said, and sickness soured in his throat.

"Please."

"I can't, I can't!"

He turned and ran blindly, half-fell down the cracking stairs.

**D**OCTOR Burns, head of the readjustment staff at the Youth Center, studied Wayne with abstract interest.

"You enjoyed the hunt, Seton? You got your kicks?"

"Yes, sir."

"But you couldn't execute them?"

"No, sir."

"They're undesirables. Incurables. You know that, Seton?"

"Yes, sir."

"The psycho you only wounded. He's a five-times murderer. And that girl killed her father when she was twelve. You realize there's nothing can be done for them?"

**THE RECRUIT**

That they have to be executed?"

"I know."

"Too bad," the doctor said. "We all have aggressive impulses, primitive needs that must be expressed early, purged. There's murder in all of us, Seton. The impulse shouldn't be denied or suppressed, but *educated*. The state used to kill them. Isn't it better all around, Seton, for us to do it, as part of growing up? What was the matter, Seton?"

"I—felt sorry for her."

"Is that all you can say about it?"

"Yes, sir."

The doctor pressed a buzzer. Two men in white coats entered.

"You should have got it out of your system, Seton, but now it's still in there. I can't turn you out and have it erupt later—and maybe shed clean innocent blood, can I?"

"No, sir," Wayne mumbled. He didn't look up. "I'm sorry I punked out."

"Give him the treatment," the doctor said wearily. "And send him back to his mother."

Wayne nodded and they led him away. His mind screamed still to split open some prison of bone and lay bare and breathing wide. But there was no way out for the trapped. Now he knew about the old man and his poker-playing pals.

They had all punked out.

Like him.

**END**

**105**

Rumor said devils lived in the cave. The truth was even more appalling!

# ALL THAT EARTHLY REMAINS

BY C. C. MACAPP ILLUSTRATED BY GAUGHAN

**B**REATHING a little heavily in the Andean air, and still dazed at the urgency with which he had been whisked southward (via jet bomber), Dr. Luis Craig walked across packed earth toward a powerful-looking helicopter which, he had just been told, was to take him on the last leg of his trip. He listened tiredly to the unctuous words of his escort, a Lieutenant Rabar who wore the uniform of this Latin American nation's Air Force and who was to fly the helicopter.

Shouts erupted behind them, at the edge of the field. Something snarled at his left ear. The sound was familiar, though not recently so: the crack of a rifle. He hit the

dirt.

Another bullet came searching, but now the shouts got themselves organized into crisp Spanish. Sidearms and at least two automatic weapons blatted. There were no more rifle shots. Cautiously, he raised his head to look at the knot of uniformed men where the sniper had been.

Rabar stepped forward, offering a hand. "Are you all right, Doctor?"

Craig ignored the hand and got up without help. "Quite, thank you." He had disliked Rabar from the moment of introduction; and now it was in his mind that Rabar had stepped carefully away from him *before* the first bullet came.

As casually as he could, he walked to the aluminum ladder hung upon the helicopter's side and hauled himself up. He stopped in the hatch, dignity forgotten, startled at the disparity of the three men already in the ship.

**D**IRECTLY across the cabin sat a gaunt scarecrow of a man in a black priest's hassock. An oxygen mask dangled on his thin chest, suggesting a bloated crucifix. The long, swarthy face was pockmarked, dour and without animation at the moment, except for fierce black eyes that burned steadily into Craig's own. Craig thought of a condor, perched near some nearly ready meal. He was immediately ashamed of the thought.

Forward of the priest sat a brown Indian. His face mirrored dignified resignation to being carried in this hellish contraption to horrible death, or worse.

Occupying the only seat on the hatch side was a tautly uniformed man who eyed Craig coldly.

The priest spoke. His voice was deep and gently strong, caressing the Spanish syllables like a great soft bell. "We are abject, Doctor. We had tried very hard...but there are fanatics."

"Eh?" said Craig. "Oh. Well, I am unhurt, as you can see."

"For which, thanks to the Almighty. Our humblest apol-

ogies. You speak Spanish exceptionally well, Doctor."

Wondering if there were a question behind the compliment, Craig said, "My mother was Mexican." He did not think it necessary to add that he'd grown up near the border, and had once spent two years as an exchange Professor of Physics at the Mexican university.

The priest nodded once. "I see. It was thoughtful of your government to choose you. And more than kind of you to come. But, forgive me; the shooting has made me forget my manners. This—" indicating the uniformed man—"is General Noriega." He laid a hand on the shoulder of the Indian. "And this one prefers to answer to the name Dientes."

Craig looked at the brown face with interest. Archeology was one of his hobbies, and in this part of the world... 'Dientes' was Spanish for 'teeth,' he mused. Abruptly, under his gaze, the immobile face split into a wide nervous smile revealing the source of the nickname. They were large, even and very white.

"And I," the priest was saying, "am called Father Brulieres. Won't you seat yourself?"

Craig tensed in surprise. The name Brulieres had been very much in the news of late. A priest by that name had led the movement which put the present government in power

—and was still reputedly, the man who actually ran it.

Craig realized he was still perched awkwardly halfway into the cabin. Mumbling something, he squeezed his bulky mountain gear through the hatch and took the empty seat beside the priest.

**R**ABAR came in, closing the hatch behind him, and went forward to the pilot's seat. He glanced around at his passengers.

It seemed to Craig that he was more interested in faces than in the condition of seat belts. Rabar worked at switches and buttons. Engines coughed, then roared. From overhead came the rising "whoosh" of the vanes. The craft shivered and lifted.

They went on oxygen at once, and Craig, under the eyes of the other passengers, was glad to put the breather over at least part of his face. Imitating the others he pulled down the earflaps of his helmet. It seemed to have built-in radio, as he could hear Rabar advising them to strap in. A moment later, clearing his throat, he discovered that his breather contained a mike. He was surprised at such advanced electronics here.

They were quickly closed in by mighty cliffs. Below them, a river tumbled wildly. Where it could find root-holds, fantastic greenery burgeoned, but it did little to disguise the menacing rock. The cabin's

plastic windows gave all too clear a view.

Turning from the window beside him, Craig found his eyes wandering to the insignia pinned to the priest's hassock. Of elegantly wrought gold, it was the same emblem he'd noticed on buildings, vehicles and other government property here. It looked like a set of football goalposts with the uprights moved in close together, leaving the crossbar extending to the sides.

The priest caught his look and gave him what might be intended for a smile. "You wonder about our emblem? It represents the Church and State standing—what is the expression in your own language?—'four-square' together."

"Oh." Craig realized that the symbol was simply a cross with two posts instead of one. He felt a little annoyed. His own government had told him enough to make him eager to come on this job, but they'd also warned him emphatically not to discuss politics or religion. He supposed the United States needed friends wherever they could be found, but a dictatorship wasn't his notion of a good alternative to Bolshevism.

He realized that the warning had point. He didn't know how ruthless these people might be, but the shooting back at the airfield hadn't been any game of marbles. For that matter, the whole coun-

try, or what he'd seen of it, had an armed-camp air.

He decided the thing to do was to concentrate on the scientific reason for his visit, and now was as good a time to start as any. He leaned toward Brulieres, then realized that was n't necessary. "Er—are you at liberty to tell me anything about the explosion?"

Brulieres eyed him for a moment, and again there was the hint of a smile. "We could hardly be secretive with *you*, Doctor. You are the expert. How much were you told?"

"Just that there'd been a nuclear explosion of unknown origin. They said there was something spectacular about it."

"Spectacular? *Si!* Your government was gracious enough to accept our request for technical help without demanding details. Security is very difficult, as you comprehend." Brulieres looked absent for a moment. "The explosion occurred at a spot famous in pre-Christian legends, which is why friend Dientes accompanies us. He is considered *experto*." The intense eyes turned upon the Indian, with a hint of mischief. "Not that he fails to be a good Christian as well."

The Indian crossed himself nervously.

"The explosion," Brulieres went on, "seems to have uncovered some very ancient tunnels. We wish to explore them, but we felt we needed a

nuclear physicist along. Especially since there appears the possibility that the explosion originated from the tunnels."

Craig heard Noriega clear his throat. Brulieres glanced at Noriega. "It has also been suggested," the priest said, "that the uncovering of the tunnels is coincidental, and that the explosion was of foreign origin."

Craig thought that over, and was annoyed. "That does not seem likely," he said, a little stiffly. "Nobody is tossing live warheads around."

Noriega spoke for the first time. His voice was crisp and rather high. "You can perhaps speak for your own nation, Doctor Craig; but others too possess missiles."

Brulieres interposed, "You no doubt know, Doctor, that a communist putsch very nearly took over this country. The present government has been compelled to very strict measures against a further attempt. Therefore we are not popular with the communist nations."

Craig waved a hand impatiently. "Yes, I know that, but..." He realized he was being careless. "I only wish to approach my investigation with an open mind. You say the tunnels were ancient? Incan, perhaps?"

Brulieres shook his head slowly. "They were hardly capable of anything on this scale. One cannot speak so surely of those who preceded

the Incas in this place.”

Craig pondered, and felt his pulse move faster. “How much have you learned so far?”

“What can be seen from the air. We will be the first to land, if you decide it is safe.”

## II

THEY rose with the canyon, and its upper ramparts began to display patches of snow. Ahead loomed solid whiteness. They strained upward and emerged over a snowfield glaring white in the sun, its jagged peaks casting crisp blue shadows. The copter's own shadow danced along beneath them like a crazy gnat.

They aimed for a cluster of five or six peaks dominating everything else. Dientes, twisting nervously in his seat, mumbled something about “*puesto de los demonios.*” They flew between two of the peaks and were in a basin formed by the roughly circular cluster.

Zero ground of the explosion was as obvious as an ugly dark blotch on white cloth. Snow had been melted away from an oblong area on the inner slope of one peak, leaving naked rock. Craig stared at what lay revealed. A plateau was carved out of the mountainside, so flat and so precisely oval that there wasn't an instant's doubt that it was artificial. The uphill

wall was vertical, following exactly the curve of the ellipse. The wall was in shadow, but Craig could make out the five black tunnel mouths, all of a shape and evenly spaced.

He let out his breath in a grunt as he remembered that this was a blast area and that they were getting close. Hastily, he unhooded one of the instruments, his fingers awkward with excitement. He watched the dial. No serious radiation yet. Rabar looked at him, and he nodded his head to indicate they could go closer.

The radiation increased a little but was still mild. He pondered. The blast had been very clean, and of a low order, melting the snow without even scarring the rock. Apparently it had occurred not far above the surface and over the center of the plateau. He didn't know of any existing warheads that fit the explosion, nor could he believe that either intent or coincidence had placed the blast so exactly.

The copter was hovering now, the other passengers watching him silently. He met Rabar's eyes, and glanced away, uncomfortable. If the priest's eyes reminded him of a vulture's, then Rabar's made him think of a wolf's. They had an odd yellowish tinge, and were at one time alert and devoid of expression. Craig couldn't know where the man fit into things, but he didn't

ring true as a simple pilot.

Craig needed no diagrams drawn for him, so far as his own position went. In the first place, the opposition might assassinate him simply to embarrass the government. On the other hand, if he seemed to stand in the way of Noriega's project of making political capital of the explosion, and if Noriega represented a strong faction in the government, that faction might think it worth while to let something happen to him and blame it on the communists.

But the hottest potato of all would be whatever he learned at the spot of the explosion. He could imagine all sorts of fabulous things. So would others, and some of them would go to considerable lengths to know.

**A**N instrument, dangled at the end of a line, showed no bad radiation, so Craig said they could land.

When he stood on the plateau the tunnel mouths seemed like converging black stares. Nevertheless he itched to explore. Impatiently, he led the unloading and stacking of his equipment.

When that was done the group stood for a minute, evidently all feeling the awe Craig did. Dientes was first to break the silence, muttering something under his breath.

Brulieres fixed the Indian with a look that was not entirely severe. "*Christian pray-*

ers, *hijo*, if you please." He turned to Craig. "What can be learned where we stand?"

"I should be able to determine the type of explosion. I will have to take rock samples, and set up some apparatus."

"How long will that require?"

"Less than an hour, with luck."

Brulieres was thoughtful for a while. "In that case, I believe we shall begin reconnoitering the tunnels while you work. But first, let us hear from our expert in demonology."

Dientes squirmed guiltily in his mountain clothing. "I know only what the old tales say, Padre."

"Tell us, if you please. We will decide later whether you have been guilty of *paganismo*."

"Si, Padre. This place is the home of the Fire Devils. There is no question of the fact. It is precisely as described when I was a small boy sitting at the feet of *los viejos*."

"Well, then. What manner of devils were they?"

"Creatures of fire, Padre, such that the eye could not behold without being blinded. Brighter than the sun."

"Did they make war upon your people?"

"Those who approached this place were punished with spears of fire. It is told that in ancient times, they were often seen flying through the

sky, trailing long tails of white feathers. Sometimes they visited the villages, demanding strange things and frightening the people."

"Do the stories mention these tunnels?"

"No, Padre. The Fire Devils lived beneath the snow. They were seen to vanish into it."

"Without melting it?"

"They could turn off their fire, perhaps. In any event, Padre, who knows what is possible with demons?"

"I know that you need and will receive many hours of strict Christian instruction. How is it that men returned to tell of these things if the devils pursued them with spears of fire?"

"Some escaped."

"Is it definitely told of individuals who were killed?"

Dientes looked thoughtful, and disappointed. "I do not recall the names of any who were slain."

"Bah. Why have there been no reports in recent years?"

Dientes shrugged. "*Quien sabe?* Perhaps the arrival of the true religion has driven away the devils."

"Perhaps," said Brulieres, the corners of his mouth lifting slightly. He turned toward the tunnels. "I think, General, that I will ask you and the lieutenant to explore a little way into one of the tunnels. Come out at once if you see anything that might be dangerous."

Craig opened his mouth to protest, but held back the words. He did ache to get into the tunnels, but he wasn't a free agent here. He watched as the two uniformed men disappeared into the middle tunnel. Their flashlights were quickly lost as they rounded some turn in the tunnel.

Brulieres said to Dientes, "The doctor and I must take some samples of the rock. Will you be good enough to remain here and guard the helicopter?" He laid his hand on the Indian's shoulder. "I see that you are not comfortable in your helmet. You may remove it if you wish. We will call to you if we need you."

Craig realized Brulieres wanted to talk to him alone. He went with the priest. The Indian squatted, apparently quite comfortable without his oxygen. "He is used to high altitudes," Brulieres remarked. "You or I could hardly remain conscious here. I wished to talk to you, Doctor."

"About what, Padre?" Craig felt a little awkward with the title.

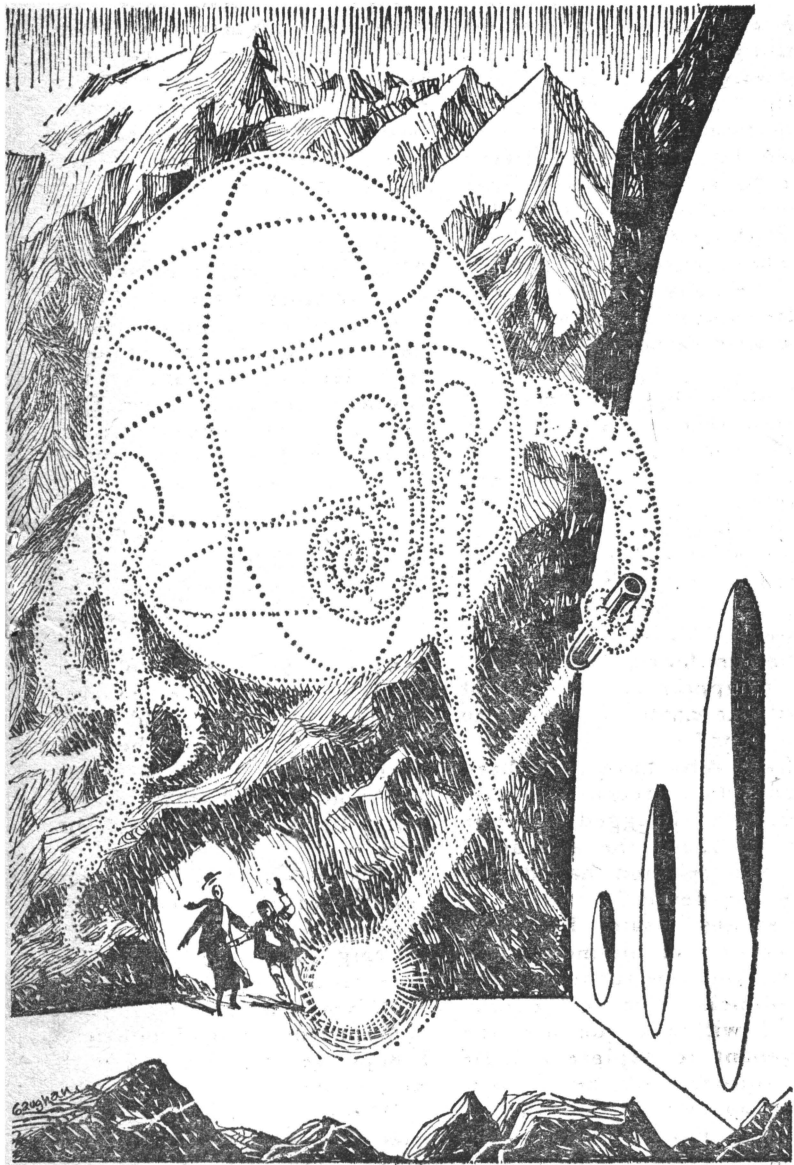
"About certain things in our country of which you do not approve."

Craig hesitated. "I... am here on a scientific mission."

"Nevertheless, you have ideas in the field of politics? I hope we can be frank with each other."

"Well... I have no intention of being critical. As you know, we—that is, in the





United States the Church is separate from the government."

The corners of Brulieres' mouth quirked. "What you mean, perhaps, is that you do not understand how the Church can support a totalitarian government. Oh, do not protest; the facts are obvious. We have been called worse names than 'totalitarian.' You do not think it right that the Church should take up actual arms."

"I—yes. Since you put it into words. We have a different concept of religion."

**T**HE priest nodded slowly. "Si. Once I visited your land. In a way, I envied the priests there. Here, we have had more to contend with than the christening of fat babies and listening to trifling sins of appetite. We are in the front line of battle."

Craig said stiffly, "Do you mean a spiritual battle, or an ideological one?"

This time Brulieres nearly smiled. "Are you so certain, then, that they are not the same battle?"

Damn it, thought Craig, I know better than to argue with a priest. He did not answer for a minute.

Brulieres said gently, "Please forgive me if I am too direct. You do not believe that Evil is a real force?"

Craig could not meet the penetrating eyes. The old doubt edged into his mind:

what if he's right and I am wrong? What if there is a personal God? He pushed the thought away, telling himself as he always did that it was just the exposure he'd suffered before he was old enough to think for himself. He said, "I'm a scientist, Padre."

"But not, unless I misjudge you, an atheist?"

"I call myself an agnostic, if you must classify me. I recognize the possibility of some force behind life and mind. I do not believe in a God who is a man with a beard. Nor do I believe in a Devil with hooves and horns."

Brulieres nodded again. "We are not so far apart as you may suppose, Doctor. Myself, I have always thought that one who claimed perfect faith without the trace of a doubt, was either an idiot or a liar. God surely has his reasons for not removing all doubt. In any case I wish to make my position clear to you. It was not happily that I took up what weapons were at hand. Had I the choice, I would choose quite differently." He eyed Craig directly for a moment. "The battle is very real and very clear to me, Doctor. I have done what I must. I hope you will believe that."

Craig's skeptical mind told him that this was just a play for a good press when Craig got home.

His emotions though,

wouldn't go along. They cried out that he was looking upon sincerity.

### III

**T**HE first tests confirmed what Craig had already presumed; that the explosion had been absolutely clean. What radiation existed had originated from molecules in the rock itself or in the vaporized snow.

There was no way of guessing at the type of blast; he only knew that mass had been transformed virtually one hundred per cent into energy in a very short period of time. No process Craig knew even approached it.

He stared again at the tunnel mouths. He was sure now that something had come out of them, risen about seven hundred feet above the plateau and released the blast. He trembled with eagerness to get inside, danger or no.

He had turned impatiently to Brulieres, when somewhere deep in the tunnels, shouting broke out. Two pistol shots echoed hollowly. There was a clatter of running footsteps. Craig found his right hand fumbling at his hip, and felt foolish. He hadn't carried a sidearm since Korea.

Lieutenant Rabar burst the tunnel, stumbling in the sunlight, his face contorted. He ran straight across the plateau and threw himself

over the edge. Dientes, who had jumped to his feet, was only a step behind him. Craig, eyes fastened on the tunnel, realized vaguely that the two must have landed in deep snow, since there was no sound of their falling.

A glow appeared in the tunnel. Craig fought the panic that seized him; stood his ground and was aware of Brulieres beside him. The glow brightened.

Its source came into sight—a ball of dazzling brilliance, oval and about the size of a man's torso. It emerged into sunlight and Craig saw that it was solid. It looked like incandescent metal, but he somehow felt that it wasn't hot. It seemed to move at will and to hover without support.

It acted alive.

It moved a little way toward Craig and Brulieres, then stopped. A tentative rumble came from it, like the beginning of thunder. Something like a tentacle lifted, clutching an object that resembled a flashlight. A blinding lance of heat shot from the object and struck the rock a few yards in front of the two men. A sound came from the rock like ice pressed upon a hot stove. Smoke puffed upward. The beam lasted only an instant, but it left a long curved scar in the rock.

The thing rumbled again, and flashed so brightly Craig threw an arm over his eyes, and heard his own voice cry

out wordlessly. His legs tensed to run, but something about the behavior of the thing held him where he was. It seemed unsure of itself, and not really threatening.

When he looked up again, it was moving laterally and up the face of the wall. He saw the flashlight-like object on the ground where it had evidently been dropped.

**T**HE oval thing, no longer glowing, lifted fast toward the mountain top. He saw that it was metal, not rusted or corroded but dull with age, and he saw the two ragged holes near the middle of it. He strained his eyes for more detail but it grew tiny in the distance and he saw no joints and no protuberances other than the one tentacle. He lost it in the shadows of the mountain's brow, then saw it flash momentarily in the sun as it curved up and over.

After a moment he turned dazedly toward Brulieres. But before he could say anything there was a sun-dimming flash of light from beyond the mountain. The ground danced. Sound, echoing from the other peaks and battering its way through the solid rock of the mountain, beat about them like monstrous punishing wings.

As the vast thunder dwindled away, Craig, squinting, saw a tenuous, rapidly dimming mushroom cloud tower above the peak. He flinched,

but knew that this would be another clean explosion. Most of the cloud was steam. He was sure they were seeing a re-enactment of the blast which had cleared this plateau.

His mind worked in simple patterns: the thing was destroyed; it had dropped its weapon.

He started toward the tunnel mouth, but he had hesitated too long. Brulieres, moving very agilely, was ahead of him.

The priest picked up the weapon and turned toward Craig. Craig, still befuddled, wondered mildly at his own detached state of mind: is he going to kill me; I'd love to get that weapon home to the labs; so that's how he keeps warm. (The latter in reference to the heavy underwear he'd glimpsed beneath the priest's cassock as the padre bent over).

But Brulieres' voice was mild. "Please forgive me for taking possession of this, Doctor. Later, I hope, you will be able to examine it; but I must think first of my own responsibilities." He looked at the thing briefly, started to stow it in some fold of his gown, then hesitated. As if unable to resist the temptation, he aimed it at the rock wall and put his thumb on something.

The incandescence squirted out. The rock cried out and yielded up a curl of smoke.

Brulieres turned the thing off at once and turned back to Craig with an expression half guilty, half delighted, like a child with a forbidden toy. Then he sighed and put the weapon away.

Craig had observed what details he could. The thing was an inch or a little more in diameter, perhaps ten inches long. All except one tip was dull and apparently knurled to give a good grip. The tip looked like quartz or some crystal, translucent except the end, which was darkly transparent when not emitting the beam. The trigger was apparently a spot of different color on the body, over which the thumb could be pressed.

Craig thought of the energy stored in that slender cylinder, the necessary insulation, the efficiency of whatever system was used to direct and control the beam. He felt a chill shiver of awe. Then another thought struck him and he looked wide-eyed at Brulieres. "A flaming sword!"

Brulieres gave him a quick glance, and nodded. "Primitives might describe it so."

**R**ABAR climbed back into sight at the edge of the plateau, looking pale. A moment later Dientes poked his head into view.

"Where is the general?" Brulieres demanded.

"Muerto," said Rabar shakily, "in the tunnel. The creature killed him."

The priest's face twitched. "Who shot at it?"

"The general, Padre. He had the only gun."

Brulieres sighed. "Then that is why he is dead. The creature would not have harmed him."

Craig had the same idea. It had used the weapon more as if in bluff, and had apparently carefully gone beyond the mountain to die. He wondered if the two bullet-holes had killed it.

But how many more of the creatures (or machines) waited in the tunnels?

He looked at Brulieres. "Are we going in?"

"By all means. Unless we are stopped." The priest looked thoughtful. "They may be coming out of hibernation or something like it. Can you tell how old this plateau is?"

"Not without taking samples to a geological laboratory. Perhaps not even then, with accuracy. But I would say, some thousands of years."

Rabar was not happy at re-entering the tunnel, but set his jaw and came. Craig stood aside to let the lieutenant go ahead of him. Rabar hesitated, then stepped by. Dientes, crossing himself and muttering, evidently preferred coming along to being left alone outside. He followed Craig.

Brulieres swept his flashlight along the tunnel walls, revealing a turn ahead. They rounded it. After a little way it seemed to Craig that the

flashlight dimmed. Then he realized that there was other light in the tunnel; the arched ceiling was aglow. It got brighter and Brulieres turned off his flashlight.

"Evidently," he said, "we are expected. Have you noticed the air?"

Craig had not, but he did now; it was warm and the pressure was higher than outside. "One moment," he said, puzzled. He went back to the mouth of the tunnel. As he stepped outside, he felt a gentle resistance as if some force were pushing him into the tunnel. He re-entered, and felt warmth radiating from the ceiling. He rejoined the others.

**T**HE floor of the tunnel sloped up gently for a while, then leveled, then turned downward. The walls were vertical and perfect, with a smooth glazed look. The ceiling curved from wall to wall in a perfect arc. There was room for two men to walk side by side by crowding. Craig walked a little behind Dientes.

Soon he took off his oxygen mask and breathed normally. He would have liked to remove his jacket, but there were too many things in the pockets to spill out.

He had counted one hundred seven paces when the tunnel turned again. It was just beyond the turn that they found Noriega's body.

The tunnel branched here; or at least, a narrower tunnel angled up and off from each side. These tunnels were dark, and, Craig found, cold and with low air pressure. The same mild resistance guarded their mouths. The General lay sprawled loosely just inside the right-hand branch, his head and torso in shadow. He looked simply and peacefully dead.

"Will you lend me a hand, Lieutenant?" Brulieres said. The two of them dragged Noriega into the light.

Craig could see no burns nor any other kind of wound except an abrasion on one cheek which might have resulted from a fall. He started to ask Rabar exactly what had happened, but checked himself. Better not appear suspicious.

He wondered what had happened to the general's pistol, and began to look around for it. But again Brulieres was ahead of him. The priest was eighteen or twenty yards farther into the tunnel, picking up something. It was the pistol. It went into the cloak as the heat-weapon had.

Craig was watching Rabar and he thought the man looked disconcerted. Craig thought, How's this for a theory: Rabar killed Noriega, took his pistol and started up the tunnel. Maybe he just wanted to learn for himself what was in the mountain, or maybe he planned to murder

the rest of the party and make it look like an accident. He met the glowing creature, panicked, put two bullets into it, then dropped the gun and ran.

Craig wondered if the priest shared his doubts about Rabar; but if he did, he didn't show it. The priest was already starting on.

Craig lost count of his steps, but judged they'd gone over a quarter of a mile when the tunnel took a final right-angle turn and opened into a great high-domed chamber.

#### IV

**I**MMEDIATELY all question as to the nature of this place vanished. It could only be a military base.

There's something recognizable about weapons, Craig mused, no matter how unfamiliar. Here were gathered great vehicles of war, bristling with the outsize cousins of the heat-tube Brulieres carried and with a myriad other menacing shapes. Yawning black tunnels led away at angles—probably, Craig thought, to hidden exits. Repair machines, some with their work partly finished, were scattered everywhere, silent and with a long-unused air about them. Nearly all of the aerial dreadnaughts (Craig was sure they were that) showed terrible wounds.

The group stared about the chamber in silent awe.

**ALL THAT EARTHLY REMAINS**

At one place, beneath a trio of round tunnels that aimed steeply upward, was what Craig took to be the main launching area, with ramps for loading...what? The litter showed clearly where great ships had rested, and that the departure had been hasty. Craig drew in deep trembling breaths and imagined the vast alien argosies lifting upon their mysterious legs of force.

He could see the avarice in Rabar's eyes, and edged closer to the lieutenant. He wasn't going to let the man overpower Brulieres and take the weapons, nor was he going to let him pick up any that might be lying around. Not that Brulieres was being careless. Craig noticed that he kept his distance from everybody, and did not turn his back for long.

They must have stared at the alien machines for quite a while before the priest's deep voice echoed in the chamber. "Come. Another tunnel beckons."

Craig looked where the priest pointed. He saw a tunnel like the one they'd left, about a quarter of the way around the chamber. It glowed with light. All the rest were dark.

He looked again at Brulieres, and was startled at the man's face. It wore a look of glory. Craig shivered. Why, he thought, the man thinks God arranged this for *him*.

Apparently *someone* was arranging things, unless the tunnels and the lights were completely robotic. Craig, ignoring the edge of panic that cut at him, followed the priest toward the entrance to the lighted tunnel.

It was short, with two bends in it (probably, Craig thought, to contain possible explosions). It opened into a smaller, lower-ceilinged chamber which had evidently been an assembly hall for troops, or possibly a mess hall. Dark openings led off it which might lead to barracks. In the far end, a single tunnel glowed with light.

They entered that tunnel, which was another short one, and found that they were indeed in the living quarters. These, if the analogies applied, had been the officers'. There was a small assembly hall, and upon one wall of that were the pictures.

**T**HE lighting was arranged to fall mostly upon that side of the chamber. The rock had been smoothed to take the murals. The first glimpse shook Craig so that he walked mechanically toward that wall, momentarily forgetting his companions.

A part of his mind admired the basic technique. Outlines in low relief had been cut into the rock, details delicately etched in and colors brought up, apparently, by altering the composition of the rock itself.

As for the style it was somewhere between realism and impressionism. Craig was no expert, but he thought the hand was defter, the viewpoint more penetrating, than any he'd ever seen. The slight alien air only increased the charm of the work.

Whatever sort of beings the aliens had been, they hadn't been an unfeeling race. Emotion leaped from every line of the murals.

The first few told concisely of the establishment on Earth of this outpost, of the local defeat and abandonment. There were some heroic scenes there, but Craig hurried through them, drawn to the next series of paintings, yet unwilling to turn his eyes to them.

They were Biblical and as stunningly familiar as if he'd lived with them all his life.

Feeling churned at his insides again.

One of the first immortalized Noah, or whoever had been the actual hero of the first version of the Flood story. The painting of the sea and the dark doomsday clouds over it was so real that Craig took a step backward. Mountainous wave masses were battered white by an incredible rain. Heaved aslant, decks tumbling water, dwarfed by the seas, was the wooden ship. A few half-drowned domestic animals stared in terror, lashed to their pens on deck. The bearded man who stood



on wide-planted giant's legs, rope-like fingers gripping a tiller that strained to escape, was bedraggled but staunch and muscled to meet the sea. A woman clung to one arm. She had been painted not delicately, but with a strong beauty that spoke in thunder of the artist's piercing compassion.

There was the crossing of the Red Sea, and the painting showed clearly how some force held aside the water. The artist had evidently been fascinated by the still-puddled seabottom.

There were more, but Craig passed them, drawn like a fish on a line to the painting of the man on the cross. The body, more cruelly punished than the Bible recorded, strained in an agony that communicated itself to Craig's own. The face, twisted with pain, sagging with exhaustion, the torured soft brown eyes, held no bitterness, no accusation.

The accusation was the painting itself. The bitterness and rage (and remorse?) was the painter's own.

**C**RAIG, frightened and miserable, looked at the others. Dientes showed only awe and humility. Rabar was holding himself tautly, but terror showed in his eyes. Brulieres shook with overflowing emotions, his face mirroring worship, glory, worry and doubt. He met Craig's eyes. His voice

higher-pitched and cracked with feeling, he said, "Have you noticed—this?"

He was standing before a vertical slab of rough stone which had obviously been used to close up a tunnel. The sealing had been done with melted rock, roughly, leaving a groove around the edge. The job suggested haste. Craig's insides writhed at what might lie behind the slab.

He gripped himself, walked over beside the priest. He could make out only a few of the characters of the inscription burned into the slab. He heard his own voice asking, as if from far away, "Do...you read Hebrew?"

Brulieres let out a trembling sigh. "With difficulty." He moved slowly closer to the slab, put his fingers to the inscription like a blind man feeling for Braille. Craig saw that his eyes were full of tears. The thin lips mumbled inaudibly.

After a long time Brulieres quit reading and stood there, unmoving. Then he started to speak. His voice was lifeless now, a low uncaring monotone. "Scholars will translate it better, but here is the gist of it."

TO THE DESCENDANTS OF THOSE WITH WHOSE DESTINY I HAVE BRIEFLY MEDDLED: WHEN YOU READ THIS, YOU WILL HAVE AT-

TAINED A TECHNOLOGY OF YOUR OWN WHICH WILL BE ABLE TO MAKE USE OF THE DEVICES LEFT HERE. ASIDE FROM THEM I LEAVE YOU MY GOOD WISHES, MY APOLOGIES, AND MY LOVE.

WHEN MY RACE ABANDONED THIS PLACE I HID FROM THEM AND STAYED BEHIND BECAUSE I HAD FALLEN IN LOVE WITH YOUR PLANET AND YOUR RACE. I HAVE TRIED TO HELP YOU. I AM NOT SURE I HAVE DONE WELL.

LOOK UPON MY REMAINS IF YOU WILL.

Craig gripped the priest's arm, heard his own words tumbling out: "It proves nothing, Padre! There can still be a God!" He found that he meant it desperately.

The priest turned, stared at him, then looked faintly amused. "Conviction? Now? You are a more fortunate man than I."

"No, Padre! Your work! Religion is deeper than..."

Bruieres' eyes flashed with some of their old vitality. "My work? This is the God in whose name I have schemed and, Heaven help me, killed." Slowly, mechanically, Bruieres drew the heat-weapon from his garments. He aimed

it at the groove around the slab and thumbed the trigger. The rock skirled, and ran to solidify in waxlike lumps. The smoke was acrid in Craig's nostrils.

When the slab was mostly cut around, some inner seal gave way and air sucked loudly into the crack. With a wrenching sound, the slab tore loose. It tilted under some power of its own, and lowered itself to the floor.

Lights, harshly angled and dramatic, flashed on in the small room beyond. It was bare except for the stone platform on the floor, and what rested upon it.

Mechanically, Craig stepped in and moved aside to make room for the others. Bruieres went to the opposite side of the platform and Dientes crouched beside him. Rabar stood hesitantly in the doorway.

THE creature was larger than a man and like nothing earthly; many-limbed, built as if for a higher gravity. There was no apparent decomposition or dessication. The atmosphere of the chamber had evidently been chosen to preserve.

There was still a pungent, half-unpleasant smell, being rapidly drawn away through ducts in the ceiling. There was a face of a sort, and two closed eyes. The face was recognizably strong. The thing might have been called ugly,

but Craig found a handsomeness about it too. He recognized the drama with which the body was arranged and lighted, and somehow for this last small vanity he loved the creature even more.

Dientes clutched at the priest's robe. "It is a lie, Padre!" And, as the priest remained silent, Dientes turned desperate eyes to Craig. "Mother of God! Will no one say it is a lie?"

Craig felt emotionally depleted. Inside him were a sick regret and a hollowness where something had died, but cold reason remained. If there is no God, he thought, we're just intelligent animals, and we're free to live by our wits. If there is no God, then there is no Devil either.

He pondered that...and decided with grim amusement

that there was Devil enough.

And, in any event, there were needs and desires, friends and enemies. He stepped swiftly around the alien and took the heat-weapon from the priest's limp fingers. He turned toward Rabar, who was (beyond any worthwhile doubt) an enemy, and who was standing in the doorway with an annoying mockery in his eyes. Of course he's happy, Craig thought; he's a Bolshevik agent and an atheist. There'll be damned little religion anywhere, now.

He raised the weapon calmly, every nerve and muscle alert, like an animal ready for action. He watched the triumph fade from Rabar's eyes. As his thumb felt unhesitatingly for the trigger, he watched the growth of fear.

**END**

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Coming in the great September issue of IF —

**THE WINNING OF THE MOON**

by Kris Neville

**CULTURAL EXCHANGE**

A new Retief novelette

by Keith Laumer

Gripping cover novelette—

**THE SNOWBANK ORBIT**

by Fritz Leiber

plus many other novelettes and short stories, features by Theodore Sturgeon, etc. There's plenty of great science-fiction reading coming in the next issue of IF—on sale July 12th—so ask your newsdealer to reserve your copy now!

BY ROBERT SCOTT

# *A Bad Town For Spacemen*

There was a reason why the city acted the way it did... and we were the reason!

I stepped back out of the gutter and watched the tight clot of men disappear around the corner. They hadn't really been menacing, just had made it obvious they weren't going to break up. And that I had better get out of their way. I got. We were well trained.

The neon of the bar across the street flickered redly on my uniform. I watched the slush trickle off my boots for a while, then made up my mind and headed into the bar. It was a mistake.

New York had always been considered safe for us. Of course there were many parts of the country that were absolutely forbidden "for your own good" and others that were "highly dangerous" or at

least "doubtful." But New York had always been a haven. The stares there had even been admiring sometimes, especially in the beginning.

But things had changed. I had realized that about half an hour after touchdown, when we were being herded through Health Check, Baggage Check, Security Check... you know the lot. Before, there had been friendly questions, genuine interest in the Mars colony, speculations about the second expedition to Venus, even a joke or two. This time the examiners' only interest seemed to be in fouling us up as much as possible. And when we finally got through the rat race, New York was bleak.

I should have stayed with

the rest, I guess, and of course a public bar was the last place any smart spaceboy would have gone to. But I had some nice memories of bars, memories from the early days.

The whole room went silent, as though a tube had blown, when I shoved through the door. I got over to an empty table as quickly as I could and inspected the list of drinks on the dispenser. This one had a lot of big nickel handles sticking up over the drink names and the whole job was shaped like one of those beer kegs you used to see pictures of. What I mean is, this was an *authentic* bar.

Phony as hell.

FROM the way this sounds, you can guess the kind of mood I'd gotten in. The noise had picked up again right after I sat down and some of the drunker drunks were knocking the usual words around, in loud whispers and with lots of glances at me. One of the progirls (her hair was green and her blouse covered her breasts—another change while I was out) gave me a big wink and then jabbed the man next to her and squawked with laughter.

I fed a bill into the change machine at the table and then dribbled several coins (prices had gone up too) into the dispenser.

I guess I must have had several, because after a while I began to feel cheerful. The

noise that was coming out of the box in the corner started to sound like music, and I got to tapping and rocking. And smiling, I guess. And that's what triggered it.

People had been coming and going, but mainly coming. And the crowd at the bar had been getting louder, and one guy there had been getting louder than the rest. All of a sudden, he slammed down his glass and headed for my table. He orbited around it for a while, staring at me, and then settled jerkily down in the chair across from me.

"Why all the hilarity, spaceboy? Feeling proud of yourself?"

He looked pretty wobbly and pretty soft and pretty old. And very angry. But I was kind of wobbly myself by that time. And anyway there are strict rules about us and violence. *Very* strict. So I just tried to make the smile bigger and said, "I'm just feeling good. We had a good run and we brought in some nice stuff."

"Nice stuff," he said, kind of mincing. "Buddy, do you know what you can do with your sandgems and your windstones?"

"We brought back some other things too. There was a good bit of uranium and—"

"We don't need it!" He was getting purple. "We don't need anything from you."

"And maybe we don't need you." I was getting sort of

fired up myself. "Carversville is self-sufficient now. You can't give us anything."

"Well, why the hell don't you stay there? Why don't all of you stay off Earth? There's no place for you here."

I could have pointed out that we brought things that Earth really needed, that Mars and Venus had literally worlds of natural resources, while Earth had almost finished hers. But he began to quiet down then and I began to feel the loneliness again, the sense of loss. You can't go home again... that phrase kept poking around in my skull.

Suddenly he sat up and looked straight at me, and his eyes really focused for the first time. "What lousy luck. What incredibly lousy luck. And how could anyone have known?"

It wasn't hard to peg what he was talking about. "It was probably *good* luck that the first space crew was selected the way it was," I said. "Otherwise you'd have had a dead ship full of dead men and no knowing why. But that one man brought the ship back."

"Yeah, yeah. I know. And the scientists figured everything out. About radiation in space being lethal to almost all types of man. But there was one thing that made a man immune. One thing."

"The scientists tried to find a protective covering that would be practicable. They tried to synthesize slaves that

would protect you. It wasn't our fault that they couldn't."

"No, not your fault." His eyes had begun to dull again. "Just a matter of enough melanin in the skin. That's all..." Then he straightened up and slammed his fist on the table. "Damn you, did you know I was a jet pilot a long time ago? Did you know I was going to be one of the space pioneers? Open up brave new worlds for Man..."

He sat there staring at me for a minute or so and the last thing he said was, "Don't you come here again—nigger."

I got up and left the table and walked out of the bar. I wasn't provoked. As I said before, we were well trained.

**T**HE first time I realized where I was was when I bumped into the fence around the spacefield. I must have walked all the way over there from the bar. I had a memory of crumbling buildings and littered streets. Things had changed while I had been out there. They were letting the city run down.

As I started to walk along the fence to the gate, I saw the ship towering against the stars. The stars and the ship. And tomorrow there would be colonists getting aboard.

I stopped and looked till I knew where home was and who the real exiles were.

I stopped feeling sorry for myself. And started feeling sorry for them.

**END**

# HUE AND CRY

The place where reader  
and editor meet . . .

Dear Editor:

The main purpose of my letter is to congratulate IF on its new format and story policy. But I beg to differ with Lawrence Crilly as regards to the Smith-Evans serial. (1) I really believe that it was the worst SF novel I've ever read—at least in an SF magazine. (2) Mr. Crilly attributes this monstrosity to the work of the Reverend Ph.D.; guess again, Lawrence! E. E. Smith couldn't write that bad "fer love ner money."

Apart from that serial and Jim Harmon's potboiler in the Jan. ish, IF is beginning to read like a good mag should, esp. the latest Anderson epic. Retief also outdid himself in March.

I'm beginning to like this Laumer...

T'anks also for the swell editorial in Volume 12 No. 1. I'd like to believe that my last year's letter was the main reason for it. (Don't say no!)

Who in the deuce is John Pederson, Jr.? Never heard of him. But on the basis of his March cover, "that guy ain't gonna be a nobody fer long!"

Please ditch Mr. James Harmon; he makes a habit of potboilers. His *The Place Where Chicago Was* marred the finish on an otherwise fine Feb. *Galaxy*.

Ken Winkes

Arlington, Washington

\* Attention, Doc Smith—wherever in the 50 states you and your house trailer may

be! How about writing in to set the record straight? —Editor.

\* \* \*

Dear Publisher:

The Paradise was in the moon. With one-sixth the gravity of Earth, men would never die.

When Adam and Eve sinned they were sent to Earth. In six times the Moon's gravity, they had to die.

There is no other way to explain the serpent's crawling instead of moving from a standing-up position.

Edmundo de la Cuera y Fourcade  
Mexico City, D.F.

\* \* \*

Dear Editor:

The fifteenth Annual West Coast Science-Fantasy Conference, the Westercon XV, will be held in the Hotel Alexandria in Los Angeles on June 30th and July 1st, 1962. I would like to invite all your readers to join us in two days of exhibits, program events, parties, auctions and confabulations in the hotel that so well housed the Solacon.

Our two-day program will center about the Saturday evening banquet, featuring Anthony Boucher as Master of Ceremonies and Jack Vance as Guest of Honor. Mr. Vance is no stranger to fans, widely known as he is for such books

as *Big Planet*, *The Languages of Pao* and *The Dying Earth*, and his most recent *Galaxy* appearance, *The Moon Moth*.

\$1.00 membership provides membership cards, progress reports and program book, admission to all events and convention rates at the Alexandria. Send for membership or information now to: William B. Ellern, Treasurer, Westercon XV, P O Box 54207, Terminal Annex, Los Angeles 54, California.

Ron Ellik

Los Angeles, Cal.

\* Okay, we will. Add one credit to Guest of Honor Vance's long list. *The Dragon Masters*, a complete short novel coming up in next month's *Galaxy*, and this fan's nomination for one of the best stories of the year! —Editor

\* \* \*

Dear Editor:

For months everyone's been crying about "the art" and "the cover." The cover tells me I am buying IF SCIENCE FICTION—*clearly*—I don't think I'm getting something else. Inside, I'm too fascinated to care about the "art"—and I've "known" all the writers for 20-30 years. Chin up!

H. J. Kitzmiller  
Cotati, California

\* \* \*

Dear Editor:

Your magazine has im-



proved. I get it irregularly here; however the January issue inspired me to write. I think a magazine should have a letter col.

*Masters of Space* was very good. I only read the second part of the serial, however, since I missed the November issue. It was similar to all the other stories I had read by E. E. Smith—exciting and magnificent in scope. By the way, is E. E. Evans an alternative pseudonym of Smith? (Like Wyndham-Parkes?)

Brent Phillips

Port-of-Spain, Trinidad

\* Not only is Evans not Smith's pseudonym, but we don't even think that Parkes is Wyndham's!—Editor.

\* \* \*

Dear Editor:

Here I am again! Since in my last letter I spent my space discussing features, I feel that I should now give my opinion on stories. First, the February *Galaxy*. Terrific issue! I suppose I'll rate the serial highest, since there's something about a novel that really carries your interest and makes it seem all the better looking back. This especially is true of anything by Poul Anderson, who ranks with Arthur C. Clarke in the skill of holding readers' attention—and I thank him for the fine space ballad. Second place goes to that lovely article of super-extrapolation, *The Martian*

*Stargazers*. Please, more of the same. Then there was the Pohl-Kornbluth novella, a fast-moving, highly enjoyable, semi-serious comedy of errors.

For a time when Earl Kemp and his ilk are complaining that there are no new ideas in sf, *Galaxy* and *If* hold an amazing number of totally new conceptions. I enjoyed the following two stories for this very reason: *Shatter the Wall* and *The Place Where Chicago Was*. Willy Ley's article was interesting, as usual. There were only three failures in the whole ish, each, sadly, by old pros. Edward Wellen wasn't funny; Algis Budrys wasn't coherent; and Fritz Leiber was not very earth-shaking, nor was his story good enough to stand on its own. Still, *Galaxy* is doing very well.

Now *If*, March 1962. The highlight was of course *Kings Who Die*. A good example of serious sf in *If*. Had Anderson given it a happy ending, he probably wouldn't have gotten his point across. Another surprisingly good story was *Ty-balt*, which ended a bit abruptly but was nicely written. Then there's the inevitable Keith Laumer story. They're fun, I suppose, and lot of people seem to like them, so go ahead and run them... as long as you limit yourselves to only one of this type of story per ish.

*Seven Day Terror* was an amusing kid story—they're

nice to have now and then. The other three stories weren't particularly great, but they're chock full of new ideas and themes.

Good months for both magazines.

Paul Williams  
Belmont, Mass.

\* \* \*

Dear Editor:

I must say that I was flabbergasted by Paul Williams' letter in the March *If*. One of the best covers of the year on any sf mag was *If's* September cover. Beautiful. And then came the November issue. What beauty anyone can see in ten different styles and sizes of type is beyond me. Not only that, but the art work petered out too. All you're left with are "nothing" covers where before you had exciting, original ones.

And I would lodge a stiff protest against the contents page. Why you ever changed it mystifies me completely. I would like to congratulate you, though, on the interior illos in the March issue. All of them are very, very good and a vast improvement over previous issues. (Whatever happened to Bernklau? I'd like to see him back.)

Now to the stories. *E Being* and *The Madman from Earth* reflect your promise of more wonder in *If*. Both stories were excellent entertainment. Keith Laumer is great, his one

clinker in this series being *Gambler's World*. *E Being* was extremely original and well written—more like this. *Kings Who Die* was good but the writing seemed a little inconsistent. All things considered, though, this story was good and it stayed interesting from beginning to end. *Tybalt* was fair but all the buildup just didn't justify the ending. *Dangerous Quarry* was poor. It was fairly interesting at the beginning but it just didn't say anything and was very poorly plotted.

I cannot make up my mind which was worse—*The Happy Homicide* or *Seven Day Terror*. These two stories represent the lowest depths to which any magazine has ever sunk.

Irwin Sternberg, Jr.  
Tucson, Arizona

\* Paul—meet Irwin. Irwin—meet Paul. Now you see how easy it is to put together a science-fiction magazine? All you have to do is print the kind of stories the readers write in to say they like!

—Editor.

\* \* \*

That's the way the type sets for another issue. Say, you fellows who mention that you can't get *IF* regularly on your stands—ever think of subscribing? That way you don't have to worry about getting your copy; the Post Office takes care of it! —Editor.

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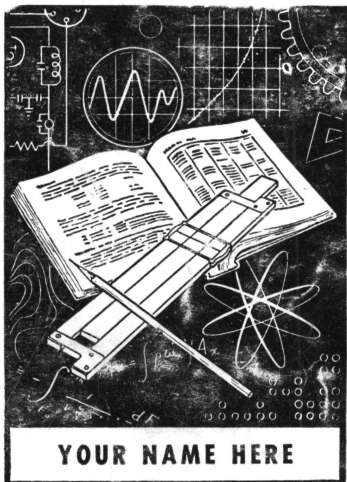
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