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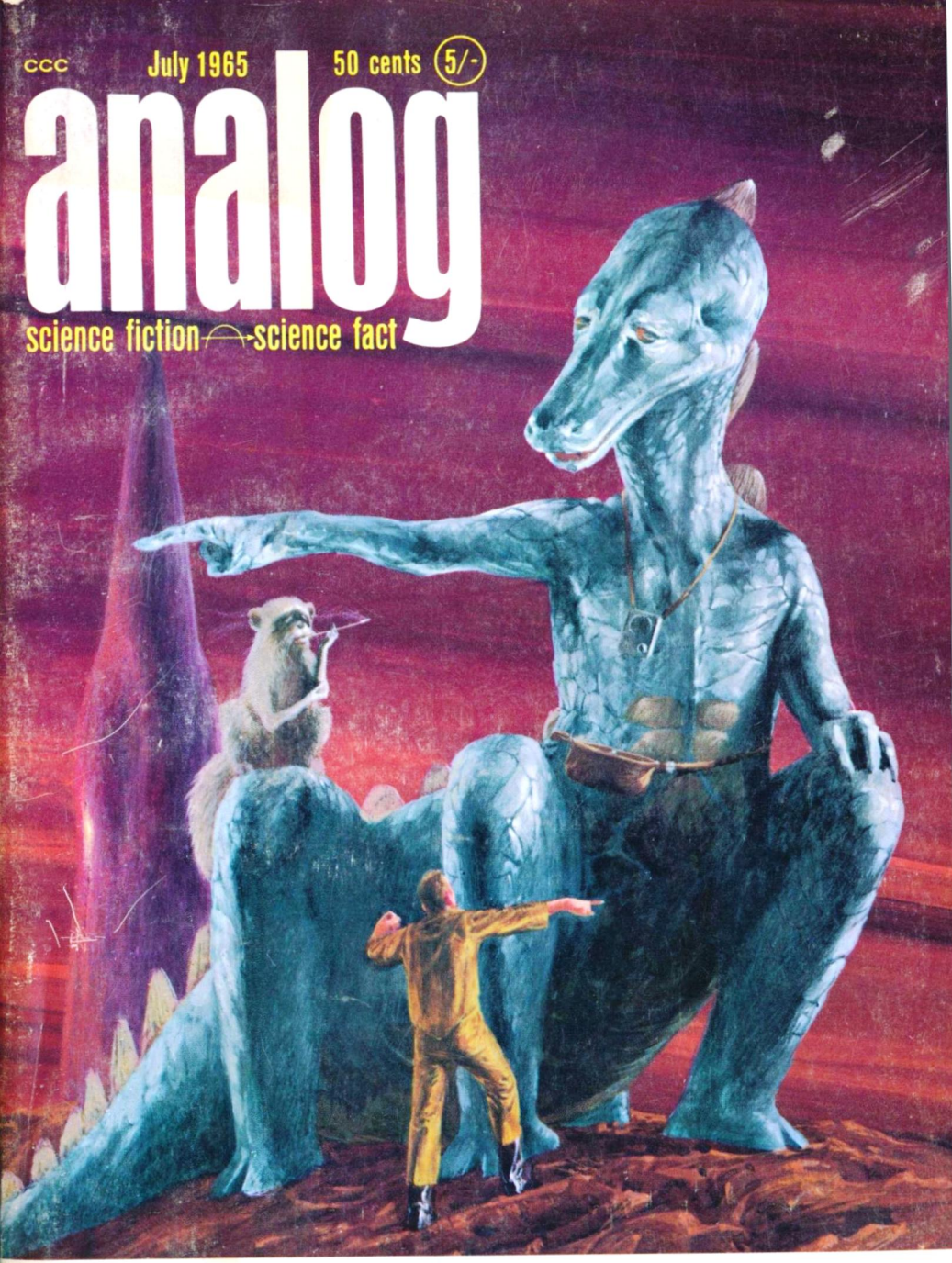

TRADER TEAM BY POUL ANDERSON

The record-smashing winner of the 1965 Masters, golf champion **JACK NICKLAUS,** tells you 55 ways to lower your golf score

JACK NICKLAUS

When to chip with a putting stroke from off the green. *(See p. 91)*

"THE VICTORY by Jack Nicklaus in the Masters," says Bobby Jones, in the *New York Times*, "was the greatest tournament performance in golf history."

Now, in his first book, MY 55 WAYS TO LOWER YOUR GOLF SCORE, Nicklaus shows you how to slash strokes from your game. It is a step-by-step revelation of his approach, his golf thinking, and his championship technique.

Here is what he has to say about his book:

"Some time ago, *Sports Illustrated* invited me to do a series of articles. They teamed me up with Francis Golden, a brilliant artist who knows the mechanics of the game of golf almost as well as I do. Between us, we came up with what I honestly feel is a *new kind* of golf instruction: *pictures* that so clearly show such things as firm grip, smooth stroke, movements of arms and legs, that the word explanations can always be short and absolutely to the point. The lavish use of as many as four colors per picture — plus a series of color arrows, properly placed — make this possible.

"Those magazine articles, which originally started out as a ten-parter, were so well received that they grew and grew — first into a regular feature, and now, this book. I'm very proud of my book, because over the years I've read just about everyone *else's* golf book. And while some of them were helpful, too many of them (in my opinion) take you too far back from where you happen to be. Others strain at picking the specks out of the pepper, or overemphasize one phase of the game at the expense of others. I don't fall into any of these traps.

Here we go . . . my 55 ways

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"You'll see how to lick narrow holes with a controlled fade . . . how to execute an often overlooked but vital element in the intentional hook.

How to use the right knee for extra power. *(See p. 22)*

"If tension is high and you need only to put a medium approach shot into the middle of the 18th green and two-putt to break 90 (or take a Nassau or win the Club championship), I'll show you how the pros do it. I'll also show you how to hit a shot that is quite difficult for most golfers, but vital for a better score: the long full iron from a fairway sand trap.

You benefit from tournament tactics

"Every one of the 55 situations I tell you about in my book has come up in actual play. Many times, specific tournament instances are cited. And frequently, I'll tell you what *other pros* do. For example, you'll get a tip I learned from Jack Burke on how to get more accurate distance and aim on putts. And you'll see why Gary Player — who is only 5 feet 7 — uses a shaft one inch *longer* than most other pros.

"In my book you'll also get answers to the 'whys' and 'hows' that so often bug you in the course of play. How can you hit a long-iron approach shot that will clear bunkers and hazards in front of the green, yet stay out of trouble behind the green? How can you *easily* hit a ball in a divot mark or in a bad fairway lie?

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"You'll get much more valuable know-how in my book — but space limitations keep me from elaborating here. Instead . . .

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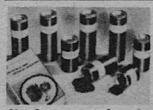

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keeperism

an editorial

JOHN W. CAMPBELL

I think that if I were the average Vietnamese, I'd want the Communists to hurry up and win the civil war, and get the Americans out.

North Viet Nam is peaceful, has a stable government, clearly understood operational system, and very little confusion. A simple-minded man there is told what the score is, what he has to do, and how he is to do it, and all he has to do is carry it out, and things work out reasonably adequately.

In South Viet Nam, the same simple-minded man doesn't know which end is up, and it wouldn't do him any good to know, because next week some other end will be up. The Saigon government-as-of-today collects some taxes, then the Viet Cong bushwhacks the government troops, takes over, and collects some taxes. The Viet Cong has been collecting tolls for several months on a major highway between Saigon and one of the important northern cities. Theoretically, the highway belongs to the Saigon govenment, but they can't hold it and the Viet Cong can.

The Buddhists want the Communists to take over, I suspect, partly because the Communists are strongly against religion in the Catholic sense. In most early-citizen-level cultures—Renaissance Europe for instance—"freedom of religion" means that my religion is free to stamp out any and all rivals. Since Buddhism is closer to being a philosophy than a revealed religion, it's more compliant to Communist doctrine, and would, therefore, be

less obnoxious to Communist bureaucrats.

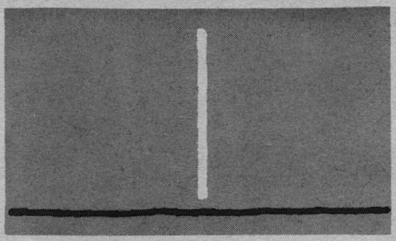
The major trouble, however, lies in the fact that the cultural level of Viet Nam's people is not something Americans understand, and the American political philosophy is about as appropriate to them as snowshoes on a gazelle.

We Americans are sort of sold on the idea of Equality for All, and Every Man His Own Philosopher. It doesn't work any too well, even for us—and we represent a cultural evolution that passed through the feuding-petty-states phase some five hundred years ago. (What's happening in southeast Asia today is very similar to what happened in southwest Eurasia—i.e., the European peninsula of Asia—around 1200 to 1600.)

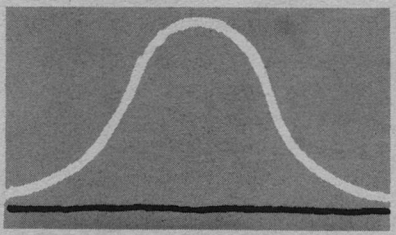
In the first place, the Equalitarian doctrine is probably fantasy, a flat contradiction of known reality. Imposing a fantasy on a human population is always cruel; the further removed from reality the fantasy is, the more vicious the cruelty resulting. The Equalitarian philosophy is somewhat like the Greek legend of the Bed of Procrustes. The tale hath it that Procrustes was a barbarian highwayman who, when he captured some traveling merchant, would entertain his captive at dinner—dining on the best of the victim's supplies—and then put him to bed in Procrustes guest bed. If the captive was a little too short for the bed, he was stretched to fit; if he was too long for the bed, he was sawed off to fit.

Now if a man were a half-inch too short, it wouldn't be comfortable, but it wouldn't be really unendurable; if he were four or five inches too short, the effect would be very different indeed. Of course, being even one inch too long produced an intolerable result.

The fantasy of Equalitarianism insists that the distribution of characteristics in a human population has a distribution curve like this:



It's flatly-contradictory-to-fact, because every test that biologists, sociologists, psychologists, and other life-sciences researchers have made shows that all biological organisms show a distribution curve approaching this:



A population on whom the fantasy-equality curve is forcefully imposed has been strapped into a Procrustean bed, and the short

stretched to fit, the long sawed down to size, and to hell with what this does to the victims.

One of the worst aspects of this is that the philosophy that all men are equal has the logical corollary that "Since I am a man, and all men are equal, I know what all men are and want."

And naturally, if some men don't want what you want, that simply means that they should be made to, because that's what's good for them, since it's good for you and all men are equal.

Take a look at that second curve, remember that's the one that objective experiment shows exists in *any* biological population *with respect to any measurable characteristic*. This includes measurable psychological characteristics.

To date, we cannot measure many exceedingly important subjective characteristics; therefore it is impossible to prove in any rigorous way that subjective characteristics vary among individuals to the same degree, or in a similar manner. But the weight of evidence strongly suggests that that sort of curve applies equally to such purely subjective phenomena as the capacity for love, the pleasure an individual derives from doing X or avoiding doing Y, et cetera.

Now since only individuals on the higher end of the distribution curve have the talent necessary to achieve effective leadership, effective communication, and effective self-expression against the competition of everyone else trying to get their ideas attended to—the ideas that float around in a culture represent the thinking of *only the high end of the distribution curve.*

How many morons have made their feelings clearly and effectively understood by the general population? About the best they ever achieve is when some demagogue figures out a way to win the moron vote by promising to fulfill some inarticulate but intense desire of the morons. He does so not because it's good for the morons—it generally isn't, of course—but because the resulting moron vote is good for him.

Now one of the greatest desires of the low end of the distribution curve is a deep yearning for stability and security and freedom from having to solve new problems. Freedom from having to generate opinions, make decisions, and think out solutions to problems. He wants a stable situation, with stable, workable and understandable (i.e., memorizable) answers. The answers don't have to be *good;* they simply have to be trustworthy.

The deepest cruelty to this type of man is being stretched on the Procrustean rack that forces him to make his own decisions. "These decisions are killing me!" as the old gag puts it.

An example right here in the United States is the question of "Fair Trade" pricing. Basically, this

continued on page 156

Trader Team

First of Two Parts.
Brains, Brawn, Beauty and Business!
Brains was built in,
and could go faster than light.
Brawn evolved on a heavier planet,
and could run 150 k.p.h.
Beauty was feline,
and given to bad temper.
And Business, of course,
. . . was busy!

POUL ANDERSON

Illustrated by John Schoenherr

I

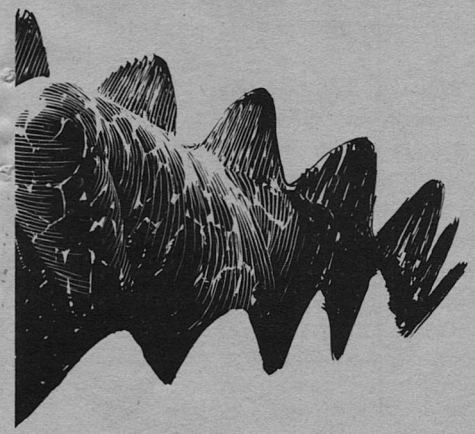
Poker is not a very good three-handed game, so the crew of the trade pioneer ship *Muddlin' Through* had programmed her computer to play with them. It bought chips with IOU's. Being adjusted to an exactly average level of competence, it just about balanced winnings and losses in the course of a mission. This freed the crew to go after each other's blood.

"Two cards," said its mechanical voice. David Falkayn dealt them onto a scanner plate that he had rigged at one end of the saloon table. An arm projecting from a modified waldo box shoved the discards aside. Down in their armored tank, at the middle of the ship, think cells assessed the new odds.

"One," said Chee Lan.

"None for me, thank you," rumbled Adzel.

Falkayn gave himself three and picked up his hand. He'd improved: a pair of treys to match his kings.



Adzel might well stand pat on nothing better, and Chee had probably tried to complete a flush; the first round of betting, opened by the machine, had been unenthusiastic. But Muddlehead itself, now—

The steel arm dropped a blue chip into the pot.

"Damn!" shrieked Chee. Her tail bottled out to twice its normal size, the silky-white fur stood erect over her whole small body, and she threw her cards down so hard that the tabletop ought to have rung. "Pestilence upon you! I hate your cryogenic guts!"

Imperturbably, Adzel doubled the bet. Falkayn sighed and folded. Chee's fury ebbed as fast as it had come. She settled down on her elevated stool and began washing, cat fashion. Falkayn reached for a cigarette.

Muddlehead raised back. Adzel's dragon countenance wasn't able to change expression, except for the rubbery lips, but his huge scaly form, sprawled across the cabin, grew tense. He studied his cards again.

A bell tone interrupted him. That part of the computer which was always on watch had observed something unusual.

"I'll go," Falkayn said. He rose and went quickly down the forward passageway: a tall and muscled young man, yellow-haired, blue-eyed, snubnosed and high of cheekbone. Even here, light-years from the nearest fellow human, he wore

lounging pajamas that would not have been out of place in Tycho Lodge. He told himself that he was obliged to maintain standards—younger son of a baronial house on Hermes, currently a representative of the Polesotechnic League, and all that sort of thing—but the fact was that he had not quite outgrown a certain vanity.

At the midsection scanner turret, he punched controls. No oddities appeared in the screen. What the devil had the observer units noticed? So much computer capacity was engaged in the game that the ship herself couldn't tell him. Maybe he'd better— He shifted the cigarette in his mouth and increased the magnification.

Westward in a deep purplish sky, the sun stood at eternal late afternoon. It was a K_0 dwarf, barely one-tenth as luminous as man's home star, furnace red. But at a mere third of an astronomical unit from Ikrananka, it showed nearly three and a half times the angular diameter and gave about as much irradiation. Through the dull light and thin air, a few other stars were visible. Spica, little more than three parsecs away, shone like a white jewel. Otherwise the heavens held nothing but a flock of leathery-winged flying beasties and, above the northern heights, the yellow cloud of a dust storm.

Halfway up a hill, *Muddlin' Through* commanded a wide overlook of The Chakora. That former sea bottom stretched ruddy-green and indigo shadowed, densely planted with low succulent crops. Here and there on it Falkayn could see clusters of buildings, woven in patterns from gaily colored fibers, each surrounding a stone tower: the thorps and defensive keeps of agricultural families. Wherever a spring seeped forth, the vegetation became intensely verdant and gold. And there thickets of long stalks, like plumed bamboo, the closest this world had ever come to trees, swayed in the wind.

The hill itself was craggy, eroded, with little except scrub growing between the boulders. On its top loomed the ramparts of Haijakata. At the foot was a tower guarding the town's well, accessible from above through a tunnel. Nearby, a dirt road from the east twisted to enter the gates. Falkayn didn't see any natives abroad.

No, wait. Dust smoked on that highway, three or four kilometers off but rapidly nearing. Somebody was coming this way in an awful hurry.

Falkayn adjusted the scanner. The scene leaped at him.

Half a dozen Ikranankans were urging their zandaras on. The big, brown-furred, thick-tailed bipeds rose in soaring arcs, touched earth, instantly gathered their leg muscles and sprang again. The riders shook lances and sabers aloft. Their open beaks showed that they screamed.

A breeze blew aside the dust and Falkayn saw what they were pursuing. He just avoided swallowing his cigarette.

"No," he heard himself feebly say. "Such things don't happen. I swear they don't."

His paralysis broke. He whirled and ran back aft. At a mere sixty-five per cent of Terrestrial gravity, he moved like a scared comet. He burst into the saloon, skidded to a halt, and roared, "Emergency!"

Chee Lan hopped across the table and switched the computer back to normal function. Adzel thrust a final chip into the pot and turned over his cards. He had a straight. "What is the matter?" Chee asked, glacially self-possessed as always when trouble showed.

"A . . . a woman," Falkayn panted. "Being chased."

"By whom?"

"Bunch of native cavalry. The human female's zandara looks tired. They'll catch her before she gets here."

While Falkayn was blurting, Adzel looked at Muddlehead's hand. Full house. He sighed philosophically and shoved the pot over. Rising, he said, "Best we go remonstrate with them. Chee, stand by."

The Cynthian nodded and pattered off to the bridge. Adzel followed Falkayn to the lower exit. His cloven hoofs clanged on the deck. At the locker, the man slipped on a gun belt and stuck a radio transceiver into a pocket of the coat he grabbed. They valved through.

To avoid delays when going out, they maintained interior air pressure at local norm, about three-fourths of Earth sea level. But they preferred more warmth and moisture. Swift, dry, and chill, the wind struck savagely at Falkayn's mucous membranes. His eyes needed a moment to adapt. Adzel picked him up in two great horny hands and set him on his own back, just behind the centauroid torso. The Wodenite had had one of the sharp plates which jutted from his head, down his spine to the end of his tail, removed for that purpose. He started downhill in a smooth gallop. His musky odor blew back around Falkayn.

"One supposes that another ship has come," he said, his basso as placid as if they were still dealing cards. "By accident?"

"Must be." Falkayn squinted ahead. "She's dressed funny, though. Could she have run afoul of barbarian raiders? We do keep getting hints of war in the Sundhadarta mountains."

He could barely make out the highest peaks of that range, glooming above the eastern horizon. On his left marched the tawny cliffs which had once been a continental shelf. To right lay only the evergreen fields of The Chakora. Behind him reared Haijakata hill, and his ship like a shining spearhead.

But the view here had grown deadly familiar. He wasn't sorry for a bit of action. No danger to speak of; that gang would probably head for home and mother the minute they saw Adzel.

Muscles rippled between his thighs. The cloven air shrilled and nipped his ears. Hoofbeats drummed. And now, ahead, he could clearly see the girl and her pursuers. Harsh nonhuman yelps reached him.

She waved and spurred her flagging zandara to a last rush. The Ikranankans shouted to each other. Falkayn caught a few words—why, they spoke the Katandaran language perfectly—

One of them halted his beast and unslipped a crossbow from his saddle. It was a slender weapon. His arms had merely half a man's strength to cock it. But the darts it threw were needle-sharp and traveled far in this gravity. He fired. The missile zipped within centimeters of the girl's loosened auburn braids. He cried an order while he fitted another dart. Two more riders unlimbered their own bows.

"Judas on Pluto!" Falkayn gasped. "They mean to kill her!"

Every sense he had surged to full alertness. He looked through red-tinged dust and ruby light as if he were face to face with the closest autochthone.

The being stood some one hundred fifty centimeters tall. In body he resembled a barrel-chested, wasp-waisted man with unduly long, thin limbs. Sleek brown fur covered him; he was warm-blooded and omnivorous, and his mate brought forth her young alive; but for all that, he was no mammal. Atop a slender neck, his bowling ball head sported a black ruff, pale eyes, donkey-like ears, and a corvine beak that might have been molded in amber. His padded feet were bare so the three long toes on each could grip stirrups. Otherwise he wore tight cross-gaitered pants, a leather cuirass with iron shoulder-pieces and a zigzag insigne on the breast, and a wide belt from which there hung dagger and saber. Three sharp-nailed fingers and a thumb cranked the bow taut. His right hand lifted the stock.

Falkayn snatched forth his blaster and fired upward. It was a warning; also, the beam dazzled native eyes and spoiled their aim. The girl cheered.

The squad at her back scattered. They were all accoutered more or less alike. The kinship symbol they shared was not familiar to Falkayn. Their leader screeched a command. They rallied and charged on. A dart buzzed near the man. Another broke on Adzel's scales.

"Why . . . why . . . they have decided to kill us, too," the Wodenite stammered. "They must have been prepared for the sight of us."

"Get going!" Falkayn howled.

He was born and bred an aristocrat on a planet where they still

needed soldiers. Boyhood training took over in him. Gone metal steady, he narrowed his firebeam for maximum range and dropped one zandara in its tracks.

Adzel opened up. His ton of mass accelerated to a sprint of one hundred fifty kph. Wind whipped blindingly in Falkayn's eyes. But he wasn't needed any more. Adzel had gotten in among the Ikranankans. He simply bowled over the first animal and rider. Two others spun through the air in a bow wave. His tail struck to one side, and that flattened a fourth. The last two bolted off across the fields.

Adzel braked himself and trotted back. A couple of the opposition were hotfooting it elsewhere, the other casualties seemed barely able to move. "Oh, dear," he said. "I do hope we did not injure them seriously."

Falkayn shrugged. A race of giants could afford to be gentler than men. "Let's get back to the ship," he said.

The girl had stopped farther down the road. As they neared her, his lips shaped a whistle.

Perhaps she was a little too muscular for his taste. But what a figure! Tall, full, long-legged and straight-backed . . . and her outfit showed delightfully much of it, what with half-length boots, fur kilt hiked up for riding, doublet appropriately curved over a sleeveless blouse, and a short blue cloak. She was armed with cutlery similar to the natives', had a painted shield hung by her saddle and a flat helmet over her rusty coils of hair. Her skin was very white. The features had an almost Hellenic clearness, with big gray eyes and wide mouth to soften them.

"What *ho!*" Falkayn murmured. "And where are you from, lass?"

She wiped sweat off her brow and breathed hard, which was pleasant to see. Adzel continued lumbering down the road. She clucked to her zandara. It walked alongside, too exhausted to be skittish of his enormousness.

"You . . . are . . . are in truth from Beyond-The-World?" she asked. Her husky Anglic held an accent he had never met before.

"Yes. I suppose so." Falkayn pointed to the ship.

She traced a sign. "*Algat* is good!" The word was local, meaning approximately "magic."

Recovering some composure, she peered after her enemies. They had restored order, but weren't giving chase. Even as she watched, one of them on an unharmed animal started off, heel for leather toward the far side of the hill. The rest followed slowly.

She reached out to touch Falkayn's hand, as if to make sure he was real. "Only rumors drifted usward," she said low. "We heard a strange Ershokh had arrived in a flying chariot, and the Emperor forbade anyone to come near. But the

story could've grown in telling. You are truly from Beyond-The-World? Even from Earth?"

"I said yes," he answered. "But what are you talking about? What do you mean, Ershokh?"

"Humans. Did you not know? They call us Ershoka in Katandara." She considered him, and it was as if a mask slid over her. With a slowness and caution he did not understand, she ventured: "Ever since our ancestors came, over four hundred years ago."

"Four hundred?" Falkayn's jaw hit his Adam's apple. "But the secondary drive wasn't invented then!"

"Obviously she means Ikranankan years," said Adzel, who was hard to surprise. "Let me see, with a revolution period of seventy-two standard days . . . yes, that makes about seventy-five Terrestrial years."

"But . . . I say, how the deuce did you—"

"They were bound elsewhere, to . . . what is the word? . . . to be colonists," the girl said. "Robbers captured them and left them here, the whole five hundred."

Falkayn tried to make his mind stop whirling. Vaguely he heard Adzel say, "Ah, yes, doubtless a squadron from the Pirate Suns, venturing so far from their bases in the hope of just such valuable booty as a large ship. They were not interested in ransom. But it was meritorious of them to find a habitable planet and maroon rather than kill their prisoners." He patted her shoulder. "Do not fret, small female. The Polesotechnic League has long since taught the Pirate Sun dwellers the error of their ways."

Falkayn decided that any comforting should be done by him. "Well!" he beamed. "What a sensation this will make! As soon as we tell Earth, they'll send transportation for you."

Still she watched him, strangely and disappointingly careful. A damsel lately in distress ought not to act that way. "You are an Ersho . . . I mean an Earthman?"

"Actually I'm a citizen of the Grand Duchy of Hermes, and my shipmates are from other planets. But we operate out of Earth. David Falkayn's my name."

"I am Stepha Carls, a lieutenant in the household troops of—" She broke off. "No matter now."

"Why were those klongs chasing you?"

She smiled a little. "One thing at a time, I beg. So much to tell each other, truth?" But then she did drop her reserve. Her eyes widened, her smile went up to about fifty megawatts, she clapped her hands and cried: "Oh, this is purest wonder! A man from Earth—my rescuer!"

Well, now, Falkayn thought, a bit stunned, *that's more like it.* He dropped his questions and simply admired the scenery. After all, he'd been away from humankind for a good many weeks.

At the ship they tethered the zandara to a landing jack. Falkayn bowed Stepha up the ramp to the lock. Chee Lan came springing to meet them. "What a darling pet," the girl exclaimed.

Chee bristled. "You try to kitchy-koo me, young lady, and you'll be lucky to get your fingers back." She swung on her fellows. "What in the name of nine times nine to the ninety-ninth devils is going on?"

"Didn't you watch the fight?" Falkayn said. Under Stepha's eyes, he preened himself. "I thought we did a rather good job on those bandits."

"What bandits?" Chee snapped. "From here I could see them go right into town. If you ask me—if you have the wit to ask me, you pair of vacuum-headed louts—you've clobbered a squad of Imperial soldiers—the same Emperor's that we came here to deal with!"

II

They hied themselves to the saloon. Going into town might lead to being shot at. Let Gujgengi come and ask for an explanation. Besides, they had a lot of mutual explaining to get out of the way first.

Falkayn poured Scotch for himslef and Stepha. Adzel took a four-liter bucket of coffee. His Buddhistic principles did not preclude drinking, but no ship on an extended mission could carry enough liquor to do him much good. Chee Lan, who was not affected by alcohol, kindled a midly narcotic cigarette in an interminable ivory holder. They were all in bad need of soothing.

The girl squinted and scowled simultaneously at her glass—she wasn't used to Earth illumination—raised it to her lips, and tossed it off. "Whoo-oo-oo!" she spluttered. Falkayn pounded her back. Between coughs and wheezes, her oaths made him blush. "I thought you were being niggard," she said weakly.

"I suppose you would have lost most of your technology in three generations, at that," Adzel said. "Five hundred people, children included, have insufficient knowledge between them to maintain a modern civilization, and a colony ship would not have carried a full microlibrary."

Stepha wiped her eyes and looked at him. "I always thought Great Granther was an awful liar," she said. "But reckon he must really have seen some things as a youngling. Where are you from?"

He was certainly an impressive sight. Counting the tail, his quadrupedal body was a good four and a half meters long, and the torso had arms, chest, and shoulders to match. Blue-gray scales shimmered overall, save where scutes protected the belly and plates the back; those were umber. The crocodilian head sat on a meter of neck, with bony ears and shelves over the eyes.

But those eyes were large, brown, and wistful, and the skull bulged backward to hold a considerable brain.

"Earth," he said. "That is, Zatlakh, which means 'earth' in my language. Humans dubbed it Woden. That was before they ran out of Terrestrial names for planets. Nowadays, for the most part, one uses whatever term is found in the language of what seems the most advanced local culture: as, for instance, 'Ikrananka' here."

"Wouldn't *you* be good in combat?" Stepha mused. One hand dropped to her dagger.

Adzel winced. "Please. We are most peaceful. We are only so large and armored because Woden breeds giant animals. The sun is type F_5, you see, in the Regulus sector. It puts out so much energy that, in spite of a surface gravity equal to two and a half times Earth's, life can grow very massive and —"

"Shut your gasjet, you blithering barbarian," Chee Lan cut in. "We've work on hand."

Adzel came near losing his temper. "My friend," he growled, "it is most discourteous to denigrate other cultures. Granted that my own people are simple hunters, nevertheless we would dare set our arts against anyone's. And when I got a scholarship to study planetology on Earth, I earned extra money by singing Fafnir in the San Francisco Opera."

"Also by parading at Chinese New Year's," said Chee poisonously.

Falkayn struck the table with his first. "That'll do for both of you," he rapped.

"But where in truth is the, ah, lady from?" Stepha asked.

"The second planet of O_2 Eridani A," Falkayn said. "Cynthia, its human discoverers named it, after the captain's wife."

"I have heard that she was not exactly his wife," Chee murmured.

Falkayn blushed again and stole a glance at Stepha. But she didn't look embarrassed. "They'd reached about an Alexandrine level of technology on one continent, at the time," he said, "and had invented the scientific method. But they didn't have cities. A nation was equal to a trade route. So they've fitted very well into League activities." He realized that now he was blithering, and stopped short.

Chee tapped the ash from her cigarette with one delicate six-digited hand. She herself was a mere ninety centimeters tall when she stood fully erect. Mostly she crouched on muscular legs and equally long arms, her magnificent brush curled over the back. Her head was big in proportion, round, with a short blacknosed muzzle, neat little ears, and cat whiskers. Save for a dark mask around the huge luminous-golden eyes, she was entirely covered by white Angora

fur. Her thin voice turned brisk: "Let us begin by reviewing your situation, Freelady Carls. No, pardon me, Lieutenant Carls, isn't it?" I assume your ancestors were marooned in this general area."

"Yes," Stepha nodded. She picked her words with renewed care. "They soon made touch with the natives, sometimes violent, sometimes not. The violence taught them humans have more strength and endurance than Ikranankans. And here is always war. Better, easier, to be the best soldiers than sweat in fields and mines, not so? Ever since, every Ershokh has grown into the—body?—the corps. Those who can't fight are quartermasters and such."

Falkayn observed a scar on her arm. *Poor kid,* he thought in pity. *This is all wrong. She should be dancing and flirting on Earth, with me, for instance. A girl is too good and gentle a creature in her heart to—*

Stepha's eyes glittered. "I heard old people tell of wars in Beyond-The-World," she said eagerly. "Could we hire out?"

"What? Well . . . er—"

"I'm good. You should have seen me at the Battle of the Yanjeh. Ha! They charged our line. One zandara spitted itself on my pike, ran right up." Stepha jumped to her feet, drew her saber and whizzed it through the air. "I took the rider's head off with one sweep. It bounced. I turned and split the fellow beside him from gullet to guts. A dismounted trooper attacked on my left. I gave him my shield boss, crunch, right in the beak. Then—"

"Please!" roared Adzel, and covered his ears.

"We do have to find out the situation," Falkayn added hastily. "Are you or are you not an enemy of the Emporer in Kantandara?"

Stepha checked her vehemence, sat down again and held out her glass for a refill. Once more she was speaking with great caution. "The Ershoka hired out to the first Jadhadi, when the old Empire fell apart. They helped set him on the Beast in Katandara, and rebuild the Empire and expand it, and since then they've been the household troops of each Emperor and the core of his army. Of late, some of them were the capturers of Rangakora, in Sundhadarta to the east on the edge of the Twilight. And that's a most important place to hold. Not alone does it command the chief pass through the mountains, but the water thereabouts makes that country the richest in The Chakora."

"To chaos with your pus-bleeding geopolitics!" Chee interrupted. "Why were you being chased by Imperial soldiers?"

"Um-m-m . . . I am not sure." Stepha sipped for a moment's silence. "Best might be if you tell me of yourselves first. Then maybe between us we can find why the third Jadhadi has you off here instead of

in Katandara. Or do you know?"

Adzel shook his ponderous head. "We do not," he answered. "Indeed, we were unaware of being quarantined. We did have intimations. It seemed curious that we have not yet been invited to the capital, and that so few came to visit us even among local dwellers. When we took the flitter out for a spin, we observed military encampments at some distance. Then Gujgengi requested that we refrain from flying. He said the unfamiliar sight produced too much consternation. I hesitate to accuse anyone of prevaricating, but the reason did seem rather tenuous."

"You are truth-told walled away, by Imperial order," Stepha said grimly. "Haijakata has been forbidden to any outsiders, and no one may leave these parts. It hurts trade, but—" Falkayn was about to ask why she had violated the ban, when she continued: "Tell me, though. How come you to be here, in this little corner of nowhere? Why did you come to Ikrananka?"

"She's stalling," Chee hissed to Falkayn in League Latin.

"I know," he answered likewise. "But can you blame her? Here we are, total strangers, and the last contact her people had with Galactic civilization was that piracy. We've got to be kind, show her we really mean well."

Chee threw up her hands. "Oh, cosmos!" she groaned. "You and your mating instinct!"

Falkayn turned his back on her. "Pardon us," he said in Anglic. "We, uh, had something personal to discuss."

Stepha smiled, patted his hand, and leaned quite close to breathe, "I do understand, David . . . So pretty a name, David. And you from Beyond-The-World! I'm strangling to hear everything about you."

"Well, uh, that is," stuttered Falkayn, "we're trade pioneers. Something new." He hoped his grin was modest rather than silly. "I, er, helped work out the idea myself."

Nicholas van Rijn left his desk and waddled across to the transparency that made one entire wall of his office. From this height, he could overlook a sweep of slim city towers, green parkscape, Sunda Straits flashing under Earth's lordly sky. For a while he stood puffing his cigar, until, without turning around, he said:

"*Ja,* by damn, I think you has here the bacteria of a good project with much profit. And you is a right man to carry it away. I have watched you like a hog, ever since I hear what you did on Ivanhoe when you was a, you pardon the expression, teen-ager. Now you got your Master's certificate in the League, uh-huh, you can be good working for the Solar Spice & Liquors Company. And I need good men, poor old fat lonely me. You bring home the bacon and eggs

scrambled with turmeric, I see you get rich."

"Yes, sir," Falkayn mumbled.

"You come speak of how you like to help open new places, for new stuffs to sell here and natives to buy from us what have not yet heard what the market prices are. Hokay. Only I think you got more possibilities, boy. I been thinking a lot, me, these long, long nights when I toss and turn, getting no sleep with my worries."

Falkayn refrained from telling van Rijn that everybody knew the cause of the merchant's current insomnia was blond and curvy. "What do you mean, sir?" he asked.

Van Rijn faced about, tugged his goatee, and studied him out of beady eyes set close to the great hook nose. "I tell you confidential," he said at length. "You not violate my confidence, ha? I got so few friends. You break my old gray heart and I personal wring your neck. Understand? Fine, fine. I like a boy what has got good understandings.

"My notion is, here the League finds new planets, and everybody jumps in with both feets and is one cutthroat scramble. You thought you might go in at this. But no, no, you is too fine, too sensitive. I can see that. Also, you is not yet one of the famous space captains, and nobody spies to see where you is bound next. So . . . for Solar Spice & Liquors, you go find us our private planets!" He advanced and dug a thumb into Falkayn's ribs. The younger man staggered. "How you like that, ha?"

"But . . . but . . . that is—"

Van Rijn tapped two liters of beer from his cooler, clinked glasses, and explained.

The galaxy, even this tiny fragment of one spiral arm which we have somewhat explored, is inconceivably huge. In the course of visiting and perhaps colonizing worlds of obvious interest to them, space travelers have leapfrogged past literally millions of others. Many are not even catalogued. Without a special effort, they are unlikely to become known for millennia. Yet from statistics we can predict that thousands of them are potentially valuable, as markets and sources of new exotic goods. Rather than continue to exploit the discovered planets, why not find new ones—and keep the fact quiet as long as possible?

A sector would be chosen, out where the traffic is still thin: Spica, for instance. A base would be established. Small, cheap automated craft would be dispatched by the hundreds. Whenever they found a world that, from their standardized observations of surface conditions, seemed promising, they would report back. The trade pioneer crew would go for a closer look. If they struck pay dirt, they would collect basic information, lay the groundwork for commercial agreements, and notify van Rijn.

"Three in a ship, I think, is enough," he said. "Better be enough, what wages and commissions your pest-bedamned Brotherhood charges! You, the Master merchant, trained in culture comparisons and swogglehorning. A planetologist and a xenobiologist. They should be nonhumans. Different talents, you see, also not so much nerve-scratching when cooped together. Nicer to have a lovingly girl along, I know, but when you get back again, ha, ha!—you make up good. Or even before. You got just invited to my next little orgy, boy, if you take the job."

"So you knew there was a civilization here with metal," Stepha nodded. "Of course your robots—jeroo, to think I never believed Great Granther when he talked about robots!—they didn't see us few Ershoka. But what did they tell you was worth coming here for?"

"An Earthlike planet is always worth investigating," Falkayn said.

"What? This is like Earth? Great Granther—"

"Any planet where men can live without special apparatus is Earthlike. They're not too common, you see. The physical conditions, the biochemistry, the ecology . . . never mind. Ikrananka has plenty of differences from Earth or Hermes, true."

(Mass, 0.394 Terrestrial, density 0.815, diameter 0.783. But though its sun is feeble, it orbits close. To be sure, then tidal action has forced one hemisphere constantly to face the primary. But this slow rotation in turn means a weak magnetic field, hence comparatively little interaction wth stellar charged particles, which are not emitted very strongly from a red dwarf anyway. Thus it keeps a reasonable atmosphere. Granted, most of the water has been carried to the cold side and frozen, making the warm side largely desert. But this took time, during which life based on proteins in water solution could evolve and adapt. Indeed, the chemistry remains startlingly like home.)

"What is there to get here?"

"Lots. The robots brought back pictures and samples. At least two new intoxicants, several antibiotics, potential spices, some spectacular furs, and doubtless much else. Also a well-developed civilization to gather the stuff for us, in exchange for trade goods that they're far enough advanced to appreciate."

Chee smacked her lips. "The commissions to be gotten!"

Stepha sighed. "I wish you'd speak Anglic. But I'll take your word for true. Why did you land at Haijakata? You must have known Katandara is the biggest city."

"It's complicated enough being a visitor from space, without getting swarmed over from the start," Falkayn replied. "We've been learning the local language, customs, the

whole setup, in this backwater. It goes pretty quick, with modern mnemonic techniques. And the Emperor sent Gujgengi as a special teacher, once he heard of us. We were going to the capital before now; but as soon as we announced that, the professor started finding excuses for delay. That was three or four weeks back."

"I wonder how much we really have learned," Chee muttered.

"What are weeks?" Stepha asked.

"Forget it," Chee said. "See here, female, you have involved us in trouble that may cost us our whole market."

"What a stupid!" the girl barked impatiently. "Conquer them."

"A highly immoral procedure," Adzel scolded. "Also it is against policy: as much, I confess, because of being economically unfeasible as for any other reason."

"Will you get to the point, you yattertongues?" Chee screamed. "Why were those soldiers after you?"

The alarm bell toned. The computer said, "A party is approaching from the town."

III

Falkayn decided he had better be courteous and meet the Imperial envoy-instructor at the air lock. He kept his blaster conspicuously on one hip.

Waiting, he could look up to the walls on the hillcrest. They were of drylaid stone; water was too precious to use in mortar. Their battlements, and the gaunt towers at their corners, enclosed a few score woven houses. Haijakata was a mere trading center for the local farmers and for caravans passing through. A rather small garrison was maintained. The northern highlands had been cleared of those barbarian raiders who haunted most deserts, Gujgengi admitted, so Falkayn suspected the troops were quartered here mainly as a precaution against revolt. What little he had found out of Ikranankan history sounded turbulent.

Which is still another worry, he fretted. *Old Nick isn't going to invest in expensive facilities unless there's a reasonably stable social order to keep the trade routes open. And the Katandaran Empire looks like the only suitable area on the whole planet. No trading post on Ikrananka, no commissions for me. What a jolly, carefree, swashbuckling life we explorers lead!*

His gaze shifted to the oncoming party. There were a couple of dozen soldiers, in leather breastplates, armed to the teeth they didn't have with swords, knives, crossbows, and big ugly halberds. All wore the curlicue insigne of the Tirut phratry; everyone in the garrison did. At their head stalked Gujgengi. He was tall for an Ikranankan, skinny, his blue-black fur grizzled, a pair of gold-rimmed spectacles perched precariously on his beak. A scarlet

robe swept to his feet, emblazoned with the crest of the Deodakh, the Imperial, phratry. At his tasseled belt hung a long snickersnee. Falkayn had not yet seen any native male without a weapon.

The human made the knee bend with arms crossed on breast that did duty here for a salaam. "To the most noble Gujgengi and his relatives, greeting," he intoned ritually. He'd never be able to pronounce this guttural language right. His speaking apparatus was not designed for it. And his grammar was still ramshackle. But by now he was reasonably fluent.

Gujgengi did not use the formula, "Peace between our kindred," but rather, "Let us talk," which implied there was a serious matter on hand that he *hoped* could be settled without bloodshed. And he made signs against evil, which he hadn't done of late.

"Honor my house," Falkayn invited, since the native tongue had no word for ship and "wagon" was ridiculous.

Gujgengi left his followers posted and stiffly climbed the ramp. "I do wish you would put in decent lighting," he complained. Since he saw no wavelength shorter than yellow, though his visual spectrum included the near infrared, the fluoros were dim to him; his horizontal-pupilled eyes had little dark adaptation, which was scarcely needed on the sunward hemisphere.

Falkayn guided him to the saloon. Gujgengi grumbled the whole way. This place was too hot, one might as well be in Subsolar country, and it stank and the air was wet and would Falkayn please quit breathing damp on him. Ikrananka ns didn't exhale water vapor. What their metabolism produced went straight back into the bloodstream.

At the end, he stopped in the doorway, stiffened, and adjusted his glasses. "So you are in truth sheltering her!" he croaked.

Stepha reached for her saber. "Now, now, now," said Adzel, laying irresistible fingers around her arm. "Is that nice?"

"Be seated, most noble," said Falkayn. "Have a drink."

Gujgengi accepted some Scotch with ill-concealed eagerness. Ikrananka ns were quite humanlike in that respect. "I was given to understand you came in friendship," he said. "I trust this occurrence can be satisfactorily explained."

"Why, sure," Falkayn said, more heartily than he felt. "We saw this female of my race being chased by strangers who, as far as we could tell, were raiders. Naturally we supposed she was from our homeland."

Chee blew a smoke ring and added in her silkiest voice, "The more so when you, most noble, had never seen fit to tell us there was an old human settlement here."

"Ak-krrr," Gujgengi hemmed. "With so much else to teach you—"

"But surely you knew how interesting this one thing would be," Chee pursued.

". . . At your own request—"

"Really, most noble, we are shocked and grieved."

"They merely form another phratry of soldiers—"

"Of considerable importance to the Empire, with which we were negotiating in good faith."

"She broke the Emperor's express command—"

"What command? That we be isolated? Now that, most noble, is another deplorable discovery. We begin to wonder how much faith has been kept with us. Perhaps we are not welcome here? We can withdraw, you know. We have no wish to force ourselves or our trade goods on anyone."

"No, no, no!" Gujgengi had inspected samples of everything from synthetic fabrics to chemical firearms. He breathed harder each time he thought about them. "It was only—"

"Though to be frank," Chee said, "the withdrawal cannot be permanent. Our people at home must be told about these Ershoka, and arrange for their transportation to a more suitable clime. The overlords of Earth will not be pleased to learn that Katandara was keeping these unfortunates in concealment. Were they, perhaps, being mistreated? I am afraid that a very grave view will be taken of this affair."

Falkayn was too rocked back to enjoy the spectacle of Gujgengi's rout. He hadn't thought of the implications. Returning the Ershoka home—why, that'd blow the gaff clear to Andromeda! And he was supposed to keep his discoveries quiet!

Maybe—No. He looked at Stepha, seated proud and cat-lithe on the edge of her chair, the light glowing in her tresses and gray eyes, down the white curves of her, and knew he couldn't betray her with his silence. Anyhow, it would be useless. Once traders started coming here, they'd also learn the facts, and some conscientious one was certain to blab.

Gujgengi lifted his tumbler in a hand gone shaky, tilted his head back, and poured deftly into his open bill. "I ought to confer with the Emperor," he said. "I really ought to. But . . . under the circumstances . . . perhaps we can reach an understanding."

"I do hope so," said Adzel.

"The fact is," Gujgengi confessed, "shortly before you came, a . . . ak-krrr . . . a most unhappy situation arose. The Empire has been in the process of conquering Sundhadarta." No mealy-mouthed phrases about "pacification" in this language. "The key to that whole region is Rangakora city. Being strongly fortified, it was hard to take, so the Emperor dispatched a contingent of his own crack troops, the Ershoka, to help

in the storming, under High Guardsman . . . uk-k-k—"

"Bobert Thorn," said Stepha curtly, suppyling the labials.

"They succeeded—"

"You might thank her," said Chee.

Gujgengi looked confused and needed another drink. "They succeeded," he managed to continue. "But then, uk, Ohertorn decided this could be the nucleus of a kingdom for himself. He and his men . . . well, they threw out our troops and took possession. There they have been ever since. We have, uk, not yet gotten them dislodged. Meanwhile the Ershoka still in the capital grow restless. And then you, of the same race, conceivably of the same phratry, appear! Do you wonder that the Emperor wished to, ak-krrr, proceed with, shall we say, circumspection?"

"Judas on a crutch!" said Falkayn indistinctly.

Stepha sat for a moment in a silence deepened by the rustle of air in ventilators, the impatient tap of Chee's cigarette holder on the table, and Gujgengi's asthmatic breathing. She scowled at the deck and tugged her chin. Abruptly she reached a decision, straightened, and said:

"Yes, truth, this has hurt the Ershoka in Katandara. They know they're under suspicion. Let the Emperor get any more suspicious, and he may even try to have 'em massacred. I don't think that'd be so wise of him—any bets who'd come out of the fracas alive?—but we don't want to rip the Empire apart. At the same time, we've got to look out for our own. So we heard rumors about these newcome strangers. Bound to happen, you know. Haijakatans would've carried the news around before the ban was laid on. Now and then, a planter may still sneak past the guardposts. We had to find out, in the Iron House, what these yarns meant. Else we'd be like blind men on a cliff trail. I reckoned to reach this place. My own idea, I true-speak you. None else knew. But a patrol eyeballed me."

Gujgengi did not seize on the obvious opportunity to bluster about loyalty and subordination. Or maybe there was no such chance. More and more during the weeks, Falkayn had gotten the impression that Ikranankans were loyal to their own blood kindred and anything else was a mere bond of convenience.

But wait!

Excited, he sprang up. Gujgengi reached for his sword, but the man only paced, back and forth, feet jarring on the deck, as he rattled out:

"Hey, this whole thing is a turn of magic for us." No word for good luck. "Your Emperor was wrong to suspect us. We're traders. Our interest lies in a secure realm that we can deal with. The weapons on this

ship can blow down any wall ever built. We'll take Rangakora for him."

"No!" Stepha shouted. She leaped to her own feet, saber gleaming forth. "You filthy—"

Falkayn let her run down, in Adzel's grasp, before he asked, "Why, what's wrong? Aren't you on the Imperial side?"

"Before I let you kill a thousand Ershoka," she said between her teeth, "I'll . . . " and she was off again, in quite a long and anatomical catalogue of what she would do to David Falkayn.

"Oh, but honey chil'," he protested. "You don't understand. I'm not going to kill anybody. Just knock down a wall or two, and overawe the garrison."

"Then Jadhadi's soldiers will take care of them," she said bleakly.

"Uh-uh. We'll protect them. Make some arrangement."

"See here," Gujgengi objected, "the Emperor's prerogatives—"

Falkayn told him what he really thought of the Emperor's prerogatives, but in Latin. In Katandaran he said, "An amnesty is our price for helping. With safeguards. I don't think it's too high. But that's for the Emperor to decide. We'll fly to him and discuss the matter."

"Now, wait!" Gujgengi cried. "You cannot—"

"Precisely how do you plan to stop us, sonny boy?" Chee leered.

Gujgengi fell back on argument. The Emperor would be displeased if his orders were flouted. There was no suitable place in Katandara for landing the ship. The populace was so uneasy that the sight could provoke a riot. Et cetera, et cetera.

"Best we compromise," Adzel whispered. "Arrogance breeds resistance."

After considerable haggling, Gujgengi agreed that, under the circumstances, the flitter might go. It was small, could dart in before many people saw it and sit unseen in the palace gardens. And indeed a message to Katandara by land would take an awkwardly long time.

"As well, at that, to keep the ship here," Chee remarked. "A reserve, in case you have trouble."

"In case *we* do?" Adzel pounced.

"You don't think I intend to go live in that dustpot of an atmosphere, do you? Not if I can help it. And I can play my tapes in peace while you and your cast-iron ear are gone."

"If you intend to play what, for lack of a suitably malodorous word, is called Cynthian music, then I will most certainly not be here."

"We'll take you home with us," Falkayn offered Stepha.

She had held oddly aloof, watching with the mask back in place. Now she hesitated. "You won't get into trouble, will you?" he asked.

"N-n-no," she said in Anglic, which Gujgengi didn't speak. "My barrack mates will have covered my disappearance, even if they didn't

know the reason for it. Not hard to do, when these stupid Ikranankans think all Ershoka look alike. But we must be . . . I mean, we're confined to the city for the time being. I can't walk right in the gates, and if I arrived openly with you, I'd be watched." She pondered. "You land quick, right in front of the Iron House, and I can dash in. If they ask you why, afterward, tell them you mistook it for the palace."

"Why do you care if you're watched?"

"I don't like the idea." She grasped his hands and leaned close. "Please, David. You've been so good a friend till now."

"Well—"

She waggled her eyelashes. "I hope we can become still better friends."

"All right, dammit!"

Arrangements were quickly made. Falkayn changed into a warm tunic, trousers, and boots, with a white cloak and a bejeweled cap tilted rakishly across his brow to add class. Two guns snugged at his waist, blaster and stunner. Into a breast pocket he slipped a transceiver; the planet had sufficient ionosphere for radio to reach between here and Katandara. He stuffed a bag with extra gear and gifts for the Emperor. Adzel took no more than a communicator hung about his neck.

"We'll call in regularly, Chee," Falkayn said. "If you don't hear from either of us for eight hours straight, haul gravs and come a-running."

"I still don't know why you bother," the Cynthian grumbled. "That wretched female has already spoiled this whole mission."

"The secrecy angle? We may solve that somehow. At worst, even with competitors swarming in, Old Nick will get some good out of a stable Empire. And, in any event we can't let bloodshed go on."

"Why not?" She gave up. "Very well, be off. I'll continue our sessions with Gujgengi. The more information we have, the better."

The Imperial agent had already gone back to town with his escort. But Haijakata's parapets were dark with natives clustered to see the takeoff.

"Oh-h-h!" Stepha gasped, and clutched Falkayn's arm. He resisted the temptation to do some aerial acrobatics and lined off for Katandara, a little north of west. The preliminary survey had made excellent maps, and Gujgengi had identified points of interest on them.

Kilometer after kilometer, The Chakora fled beneath them. They rode in a humming bubble over endless red-green fields, tiny thorps, once a strung-out caravan of laden four-footed karikuts guarded by warriors on zandara back. "Those must be Shekhej," Stepha remarked. "Their phratry does most of the hauling in these parts."

Adzel, squeezing the trio together by his bulk—not that Falkayn minded—asked, "Is every trade a family affair?"

"Why, yes," Stepha said. "You're born a Shekhej, you're a caravaneer. All Deodakhs used to be hunters till they conquered Katandara; now they're officials. The Tiruts and others, like we Ershoka, are soldiers. The Rahinjis are scribes. And so it goes."

"But suppose one is born with the wrong sort of talent?"

"Oh, each phratry has lots of different things to do. The main job is the most honorable one. But somebody has to keep house, keep accounts, keep farms if the group owns any—everything. You'd not trust that to outsiders, would you?

"Also, a youth at the age when he's to begin learning the phratry secrets, he can be adopted into a different one if he wants and if it'll take him. That's one reason we Ershoka are so apart. We couldn't marry with any Ikranankans"—Stepha giggled and made a vulgar joke—"so we have to stay in the corps. On t' other hand, for that same reason, we know we can trust our young. They've no place else to go. So we initiate them early."

"I understand most phratries are very ancient."

"Yes, Kingdoms come and go, none last more'n a few generations, but a blood line is forever."

Her words confirmed what Falkayn had already gathered. It bespoke an ingrained clannishness that worried him. If the attitude was instinctive, this was a poor world in which to set up operations. But if it could be altered—if the Ikranankans could be made to feel loyalty toward something larger than a cluster of families—

Katandara hove into view. The city lay no more than two hundred kilometers from Haijakata, which in turn was halfway to Rangakora. The Empire's great extent was west and south, through the fertile Chakora.

Winding from the northeast came the Yanjeh River, a silver gleam surrounded by a belt of vegetation that glowed against stark eastern hills and tawny western ranchlands. Where it ran down the former continental shelf and emptied into broad, muddy Lake Urshi, Katandara was built. That was an impressive city, which must house half a million. Whole civilizations had possessed it, one after the other, as Rome and Constantinople, Peking and Mexico City, had been possessed: each adding to walls and towers and buildings, until now the ramparts enclosed a sprawl built almost entirely in stone. Old were those stones, the hewn outlines crumbling, and old were the narrow streets that twisted between facades gray, square, and secretive. Only at the landward end, where the ground rose steeply, was there anything not scoured by millennia of

desert sand—the works of the newest rulers, marble-veneered and dome-topped, roofed with copper and decorated with abstract mosaics. That section, like those of earlier overlords, had a wall of its own, to protect masters from people.

With a magnifying scanner, Stepha could point out details at such a distance that the flitter was yet unseen. Falkayn went into a dive. Air shrieked. The controls thrummed beneath his hands. At the last instant, he threw in reverse grav and came to a bone-jarring halt.

"Farewell, David . . . till we meet again." Stepha leaned over and brushed her lips across his. Blood beat high in her face. He caught the sweet wild odor of her hair. Then she was out the lock.

The Ershoka were barracked in a single great building near the palace. It fronted on a cobbled square, along with the homes of the wealthy. Like them, it was built around a courtyard and turned a blank entry to the world. But some memory of Earth lingered in peaked iron roof, gable ends carved into monster heads, even the iron doors. A few Ikranankans gaped stupefied at the flitter. So did the sentries at the barrack entrance, big bearded men in chain mail, helmets gilt and plumed, cloaks that the wind flung about in rainbow stripes. But at once their weapons snapped up and they shouted.

Stepha sped toward them. Falkayn took off. He had a last glimpse of her being hustled inside.

"Now ho for Ol' Massa's," he said. "Let's hope he asks questions first and shoots later."

IV

A gong rang outside the guest apartment. "Come in," said Falkayn. A servant in close-fitting livery parted the thick drapes which served for interior doors in this wood-poor country. He saluted and announced that the Emperor wished audience with the delegates of the "Olesotechnic" gir. His manner was polite but unservile, and he used no special titles for the ruler, like His Majesty or His Potency or His Most Awe-Inspiring Refulgence. The system of hereditary jobs did not amount to a caste hierarchy; backed by his kin, a janitor was as proudly independent as a soldier or scribe.

"My associate has gone out," Falkayn said, "but I suppose I'll do."

Do what? he wondered to himself. *We've been cooling our motors for a week by my watch. Maybe one of those couriers that keep scurrying back and forth has put a firecracker in Jadhadi's pants, at last. Or maybe this time I can, when he isn't looking. Sure wish so. All right, I'll do, and I'll do, and I'll do.*

He went to get a suitably fancy tunic for the occasion. The rooms lent him were spacious, except for low ceilings, and luxurious in their fashion. Too bad the fashion wasn't his. He liked hangings of gorgeous orange fur, especially when he estimated what such pelts would fetch on Earth. But the murals were not only in an alien artistic idiom; half the colors registered on him as mere black. The bare floor was always cold. And he couldn't fit himself comfortably onto the gaunt settees or into a shut-bed designed for an Ikranankan.

The third-story balcony gave him a view of the palace gardens. They suggested an Old Japanese layout: rocks, low subtly hued plants, the extravagance of a fountain—which played inside a glass column, to control evaporation. Little but roofs were visible above the estate walls. To the west, the sun shone dull and angry crimson through a dust veil. Another storm, Falkayn thought; trouble for the ranchers.

A week inside an imperial palace could have been interesting, if the imperium had been human and reasonably decadent. Katandara was neither. In sheer despair, he had been improving his language by reading what was billed as the greatest epic in the world. It had more begats than the Bible. He made a face at the codex and thumbed his transceiver. "Hullo, Adzel," he said in Latin, "how're you doing?"

"We are about to enter what I assume is a tavern," the Wodenite's voice replied. "At least, the legend says this is The House of Exquisite Pleasures and Ferocious Booze."

"I have to mind the store. Listen, the big red wheel has summoned me. Probably just for more quizzing and more postponement of any decision, but you never know. So maintain radio silence, huh?" As far as the Galactics could tell, the Ikranankans were ignorant of this means of communication. It was as well to keep some aces in the hole.

Unless the Ershoka had told—No, that seemed unlikely. Set down with nothing more than clothes and a few hand tools, caught up almost at once in this tumultuous culture, their ancestors had rapidly forgotten the arts of home. Why build guns or anything else that would prove an equalizer, even if you found time and skill to do so, when you lived by being twice as tough as the locals? Except for a few gadgets useful in everyday life, the humans had introduced nothing, and their knowledge dwindled away into fable.

"Very well," Adzel said. "I will assure Captain Padrick it is harmless magic. I have to calm him anyway. Good luck."

Falkayn returned to the main room and followed the servant down long corridors and sweeping

ramps. A hum of activity surrounded him, footfalls, voices, rustling robes and papers. Ikranankans passed: gowned officials, hooded merchants, uniformed flunkies, planters in kilts, ranchers in chaps and spurred boots, visitors from afar, even a trader from the warm lands of Subsolar, shivering in a hairy cloak—the ebb and flow of life through this crown on the queen city. Cooking odors reminded Falkayn he was hungry. He had to admit regional cuisine was excellent, auguring well for van Rijn. If.

At the entrance to the throne room, four Ershoka stood guard, as gaudily outfitted as the men before the Iron House. They weren't at attention. That hadn't been invented here, and the humans had been smart enough not to suggest the idea. But they and their gleaming halberds scarcely moved. Flanking them were a dozen Tirut archers. Falkayn felt pretty sure those had been added since the troubles began in Rangakora. You couldn't blame Jadhadi for a soured attitude, when he could no longer trust his own *Sicherheitsdienst*.

Still, there was something downright paranoid about his wariness. Instead of jumping at Falkayn's offer to recover the stolen town, he'd interrogated for a week. Since he had nothing to lose by accepting, or at least hadn't given any such reasons, it must be due to exaggerated xenophobia. But what caused that, and what could be done about it?

Falkayn's attendant switched the drapes aside, and he passed through.

Jadhadi III waited on the Beast, a chimera in gilt bronze whose saddle he bestrode. Falkayn stopped at the required distance of seven paces—which, he suspected, gave the Ershoka by the throne time to intervene if he should make an assassin's lunge—and saluted. "Where is your companion?" asked the Emperor sharply. He was middle-aged, his fur still sleekly red-black, his beginning paunch hidden under a scarlet robe. One hand clutched a jeweled scepter which was also a businesslike spear.

"An officer of the household troops invited us on a tour of your city, most noble," Falkayn explained. "Not wishing to be both absent—"

"What officer?" Jadhadi leaned forward. The nearest of his Ershoka, a woman who would have made a better Valkyrie were she not battle-scarred, gray-haired, and built like a brick washtub, dropped hand to sword. The others in attendance, scribes, advisers, magicians, younger sons learning the business of government, edged closer. Their eyes glowed in the murky light.

"Why . . . Hugh Padrick, his name was, most noble."

"Ak-krrr. Will they be back soon?"

"I don't know, most noble. Is there any haste?"

"No. Perhaps not. Yet I mislike it." Jadhadi turned to a native guards officer. "Have them found and returned." To a scribe: "Post a notice that all Ershoka are forbidden contact with the delegates of the 'Olesotechnic' gir."

"Most noble!" The one other human not on sentry-go in the room—its length, between the polished malachite columns, was filled with alternate Ershoka and Otnakaji—stepped out from the courtiers. He was an old man, with beard and shoulder-length hair nearly white, but erect in his tunic. Falkayn had met him at other audiences: Harry Smit, senior of the phratry and its spokesman before the Emperor. "I protest."

The chamber grew suddenly very still. Shadows wove beneath the silver chandeliers, whose luminance shimmered on marble and fur and rich dark fabrics. Bitter incense smoked snakishly from braziers. The harpists at the far end of the chamber stopped their plangent chords, the ornate clock behind them seemed to tick louder.

Jadhadi stiffened in his saddle. The diamond eyes of the Beast glittered as hard as his own. "What say you?" the Emperor rasped.

Smit stood soldierly in front of him and answered: "Most noble, we Ershoka of your household also rage at Bobert Thorn's insubordination. He is no longer one of us, nor will we receive his followers among us again." (The woman guard acquired a look at those words, even more harsh than the situation warranted.) "Only let us march to Rangakora, and we will show you that the house of Ershokh stands by the house of Deodakh no less now than in the years of the first Jadhadi. But you trust us not. You keep us idle, you spy on our every step, you assign other phratries to join us in the duties that were ours since this palace was raised. This we have borne in patience, knowing you cannot be sure how strong the call of blood may be. Nonetheless, we chafe. They grumble in the Iron House. Insult them so openly, and I may not be able to restrain them."

For a moment glances clashed. Then Jadhadi looked away, toward his chief magician. "What say you, Nagagir?" he asked sullenly.

That stooped Ikranankan in the habit emblemmed with devices of power refrained from saying the obvious—that this room held fifty Ershoka who wouldn't stand for any rough treatment of their phratry chief. Instead, he croaked shrewdly, "The matter seems slight, most noble. Very few guards will find their way to your distinguished guests. If they feel so strongly about it, what difference?"

"I was speaking in your own best interests," Harry Smit added in a mild voice.

Falkayn thought he saw an open-

ing. "If we don't linger here, most noble, the issue hardly arises, does it?" he said. "Take my offer, and we'll be off to Rangakora; refuse, and we'll go home. What about a decision?"

"Krrr-ek." The Emperor gave in. "Cancel those orders," he said. To Falkayn: "I cannot decide blindly. We know so little about you. Even with friendly intentions, you could somehow bring bad luck. That was what I summoned you for today. Explain your rites to Nagagir, that he can evaluate them."

Oh, no! Falkayn groaned to himself.

However, he found the session interesting. He'd wondered before about what seemed a total absence of religion, but hadn't gotten around to querying Gujgengi. While he couldn't ask Nagagir to explain things point by point—might be as dangerous to reveal ignorance as to keep it—he gathered a certain amount of information indirectly. By claiming, sometimes falsely, not to understand various questions, he drew the magician out on the key items.

Only a moron or a tourist would generalize about an entire planet from a single culture. But you could usually figure that the most advanced people on a world had at least one of the more sophisticated theologies. And Katandara's was astoundingly crude. Falkayn wasn't sure whether to call that mishmash a religion or not. There weren't any gods: merely a normal order of things, an expected course of events, which had obtained ever since primordial Fire and Ice happened to get together and condense into the universe. But there were vaguely personified demons, powers, call them what you will; and they were forever trying to restore chaos. Their modus operandi was to cause disasters. They could only be held at bay through magic, ranging from a hundred everyday observances and taboos to the elaborate arcana which Nagagir and his collège practiced.

And magicians weren't uniformly good, either. You never knew if somebody hadn't been corrupted and was lending his abilities to the service of Destruction.

The mythology sounded as paranoid as the rest of Ikrananka thought. Falkayn began to despair of getting a trade treaty O.K.'d.

"Yes, indeed," he fended, "we of the Polesotechnic League are mighty wizards. We have studied deeply those laws of chance that govern the world. I'll be glad to teach you a most educational rite we call poker. And for keeping off bad luck, why, we can sell you talismans at unbelievably low prices, such as those precious herbs named four-leaved clovers."

Nagagir, though, wanted details. Falkayn's magic could be less effective than the human believed; Destruction sometimes lured people

thus to their doom. It could even be black magic; the most noble would understand that this possibility had to be checked.

Not being old Martin Schuster, who had once upset a whole cult by introducing the medieval Kabbalah, Falkayn must needs stall. "I'll prepare an outline, most noble, which we can study together." *Lord help me,* he said to himself. *Or, rather, Chee Lan help me. Not Adzel—a Buddhist convert isn't good for much in this connection except soothing noises—but I've seen Chee tell fortunes at parties. I'll call her and we'll work out something.* "If you would make a similiar outline of your own system for me, that would be valuable."

Nagagir's beak dropped open. Jadhadi rose in his golden stirrups, poised his spear, and screeched, "You pry into our secrets?"

"No, no, no!" Falkayn spread his hands and sweated. "Not your classified information—I mean, not anything hidden from the uninitiated of the sorcerer phratries. Just the things that everybody knows, except a foreigner like me."

Nagagir cooled off. "That shall be done," he said, "albeit the writing will take time."

"How long?"

Nagagir shrugged. Nobody else was much more helpful. While mechanical clocks had been around for some centuries, and the Ershoka had made improvements, Katandara used these simply to equalize work periods. Born to a world without nights or seasons, the people remained vague about any interval shorter than one of their seventy-two-day years. Matters were worse in the boondocks where *Muddlin' Through* sat. There, the Ikranankans just worked at whatever needed doing till they felt ready to knock off. Doubtless their attitude made for a good digestion. But Falkayn's innards curdled.

"May I go, most noble?" he asked. Jadhadi said yes, and Falkayn left before he spat in most noble's eye.

"Have some dinner brought me," he instructed the servant who guided him back, "and writing materials, and a jug of booze."

"What kind of booze?"

"Ferocious, of course. Scat!" Falkayn dropped the curtain across his door.

An arm closed around his throat. "Guk!" he said, and reached for his guns while he kicked back.

His heel struck a heavy calf-length boot. The mugger's free hand clamped on his right wrist. Falkayn was strong, but he couldn't unlimber a weapon with that drag on him, nor the one on his left hip when another brawny Ershokh clung to that arm. He struggled for air. A third human glided into view before him. He lashed out with a foot, hit a shield, and would have yelped in anguish had he been able. The shield pressed him back against

the mugger. And behind it was the face of Stepha Carls. Her right hand pushed a soaked rag over his nostrils. The strangler eased off; reflex filled Falkayn's lungs; an acrid smell hit him like a blow and whirled him toward darkness.

V

Ordinarily, Hugh Padrick said, Old City wasn't the safest area in the world. Aside from being the home of phratries specializing in murder, theft, strong-arm robbery —plus less antisocial occupations like gambling and prostitution—it was a skulking place for the remnants of earlier cycles, who resented the Deodakh conquest. Ershoka went down there in groups. However, Adzel counted as a group by himself.

"But I don't want to provoke a conflict," the Wodenite said.

"Hardly reckon you will," Padrick grinned. In undress uniform, tunic, trousers, boots, cloak, sword and knife, he was a big young man. His curly brown hair framed rugged features, where a new-looking beard grew beneath a Roman nose. His conversation had been interesting on the several occasions when he dropped in at the apartment. And Adzel, whose bump of curiosity was in proportion to the rest of him, couldn't resist the guardsman's offer of a conducted tour.

They strolled out the palace gates and across New City. The Wodenite drew stares, but caused no sensation. News had gotten around about the Emperor's guests. And the educated class had some knowledge of astronomy.

"Did you humans teach them that?" Adzel asked when Padrick remarked on it.

"A little, I reckon," the Ershokh replied. "Though I'm told they already knew about the planets going around the sun and being worlds, even had a notion the stars are other suns."

"How could they? In this perpetual daylight—"

"From the Rangakorans, I think. That's a city with more arts than most. And close enough to Twilight that their explorers could go clear into the Dark for charting stars."

Adzel nodded. Atmospheric circulation must keep the far side reasonably warm. Even the antipodes of Subsolar would hardly get below minus 50° or so. For the same reason, as well as the planet being smaller and the sun having a larger angular diameter, there was less edge effect here than on Earth. Neither the poles nor the border of Twilight differed radically in climate from the temperate zones.

Natives who ventured into the frozen lands would be handicapped by poor night vision. But after establishing fuel depots, they'd have fire on hand. Probably the original motive for such a base had been mining. Scientific curiosity came later.

"In fact," Padrick murmured, "Rangakora's a lot better place than this. More comfortable and more, uh, civilized. Sometimes I wish our ancestors had met the Rangakorans before they joined with a slew of barbarians invading a busted empire." He clipped his mouth shut and glanced around to make sure he hadn't been overheard.

Beyond the inner wall, the ground fell abruptly. Buildings grew progressively older, weathered gray blocks crowding each other, shut doors marked with the symbols of long-dead civilizations. In market sections, females occupied booths, crying their husbands' wares, food, drink, cloth, pelts, handicrafts. In the workshops behind them, iron rang, potter's wheels whirred, pedal-driven looms whickered. But the shops themselves were locked away from public sight, lest a demon or a wicked magician find ways to cause an accident.

Traffic was brisk, raucous, aggressive in fighting its way through the narrow sand streets. Planters' carts, drawn by spans of karikuts, loaded with Chakoran produce, creaked past near-naked porters with burdens on their shaven heads, but yielded to swaggering Shekheji caravaneers. A flat-bed wagon was guarded by none less than several Tiruts, for it carried stalks spliced and glued together to make timber, more costly than bronze. Awkward when they must walk rather than leap, a dozen zandaras bore Lachnakoni come to trade hides for city goods; the desert dwellers gripped their lances tight and peered warily from behind their veils. Noise surfed around, harsh Ikranankan babble, rumblings, groanings, footfalls, clangor, and dust and smoke swirled with a thousand sharp smells.

No one disputed Adzel's right of way. Indeed, quite a few tried to climb straight up the nearest wall. A hundred beaked faces goggled fearfully off the verge of every flat roof. Padrick carried high a staff with the Deodakh flag, and of course *some* word about the strangers had penetrated this far. But the ordinary Katandaran didn't seem very reassured.

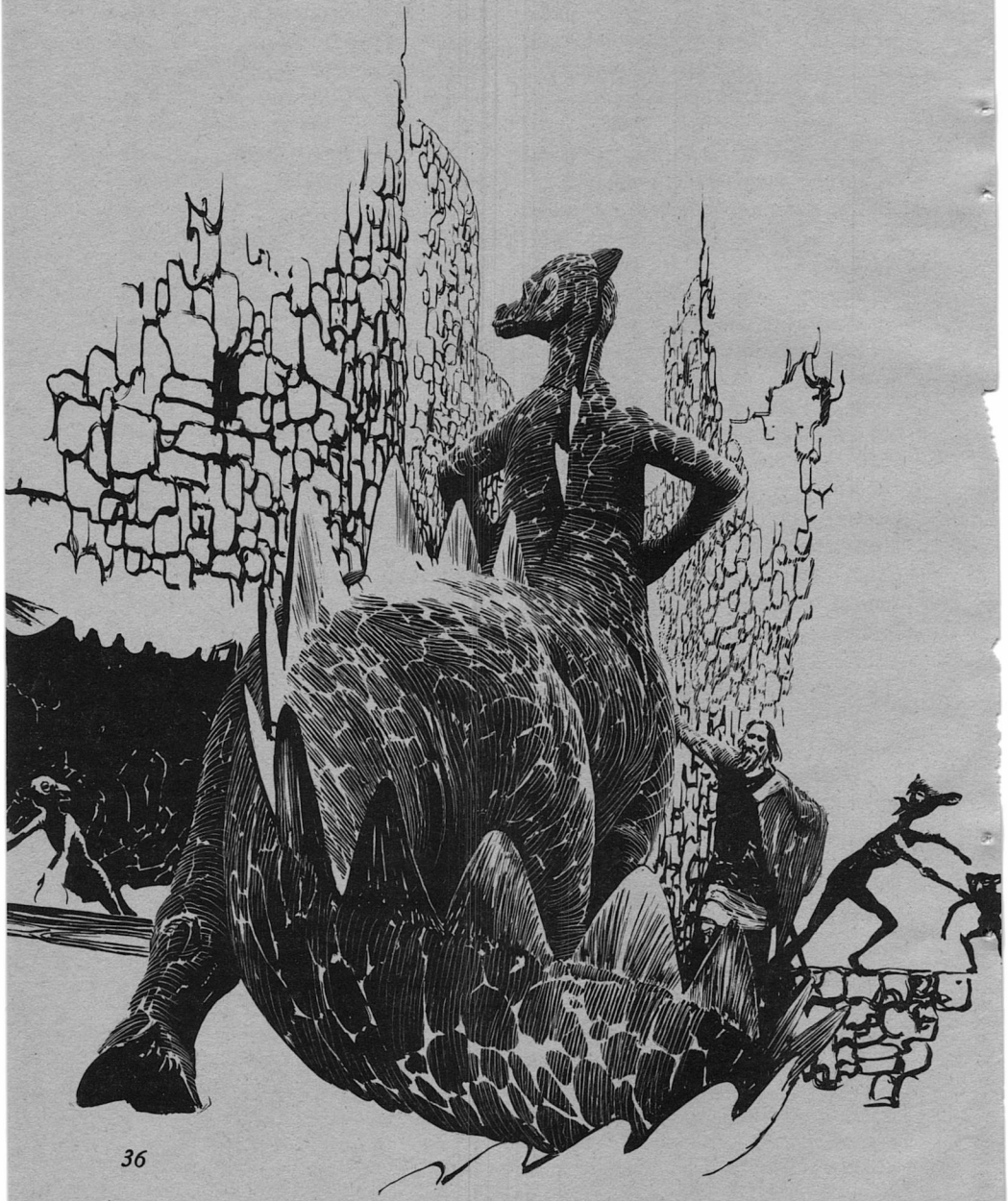
"Why is that one in the brown robe making signs at us, from yonder alley?" Adzel asked.

"He's a wizard. Taking your curse off the neighborhood. Or so he hopes." Padrick was hard to hear above the voice-roar that was rising toward a collective shriek.

"But I wouldn't curse anybody!"

"He doesn't know that. Anyhow, they reckon anything new is likely black-magical."

An attitude which evidently prevailed in high society too, Adzel reflected. That would help account for Jadhadi's reluctance to ally himself with the League envoys. *I must discuss this with David when I get back.*



Padrick spent some time showing points of interest: a statue five thousand Earth-years old, the palace of a former dynasty turned into a warehouse, a building whose doorway was an open beak . . . museum stuff. Adzel paid more attention to the imposing houses of several great phratries, where the seniors lived and member families held council. Though they took part in the present government, these blood groups had not changed their headquarters to New City. Why should they? Empires, languages, civilizations, the march and countermarch of history, all were ephemeral. Only the phratry endured.

"The House of the Stone Ax," Padrick pointed. "Belongs to the Dattagirs. Their senior still carries that ax. Flint head; nobody knows when it was made, except must've been before metal-working." He yawned. "You getting bored? Let's go where we can find some life. Old City."

"Won't they avoid me there, too?" Adzel asked. He hoped not. It pained him that mothers should snatch their cubs and run when he appeared—such cute, fuzzy little infants, he'd love to hold one.

"Not so much," Padrick said. "Less scared of black magic, seeing as a lot of them are black magicians themselves."

Down they went, past a ruined wall and into the casbah. The houses they found were much taller and narrower than those of later eras, shoulder to shoulder with overhanging balconies so that a bare strip of plum-colored sky showed overhead and shadows were thick purple. Living in a more prosperous time, when the land was not quite as arid, the builders had cobbled their streets. Adzel's hoofs rang loud on the stones, for this was a silent quarter, where cloaked dwellers passed on furtive errands and only the keening of a hidden harp resounded. Along the way, that toppled toward the sea bed, Adzel could look back to the red-tinged cliffs above the whole city; and down, to the remnants of wharfs among the reeds where Lake Urshi glimmered.

Padrick stopped. "What say you of a drink?"

"Well, I like your brew—" Adzel broke off. The transceiver at his neck had come alive with Falkayn's voice.

"What the demons!" Padrick sprang back. His sword hissed from the scabbard. A pair of Ikranankans, squatting before a doorway across the lane, gathered their ragged capes around them and vanished inside.

Adzel waved a soothing hand and finished his Latin conversation with Falkayn. "Don't be alarmed," he said. "A bit of our own magic, quite safe. A, ah, a spell against trouble, before entering a strange house."

"That could be useful, I grant." Padrick relaxed. "'Specially hereabouts."

"Why do you come if you find danger?"

"Booze, gambling, maybe a fight. Gets dull in barracks. C'mon."

"I, ah, believe I had better return to the palace."

"What? When the fun's only beginning?" Padrick tugged Adzel's arm, though he might as well have tried to haul a mountain.

"Another time, perhaps. The magic advised me—"

Padrick donned a hurt expression. "You're no friend of mine if you won't drink my liquor."

"Forgive me," Adzel capitulated. "After your great kindness, I would not be discourteous." And he was thirsty; and Falkayn hadn't intimated there was any hurry.

Padrick led the way through a half-rotted leather curtain. A wench sidled toward him with a croaked invitation, saw he was human, and withdrew. He chuckled. "The stews are no use to an Ershokh, worse luck," he remarked. "Oh, well, things are free and easy in the Iron House."

As the Wodenite entered, stillness fell on the crowded, smoky room. Knives slid forth at the wicker tables where the patrons sat. Torches guttering in sconces threw an uneasy light—dim and red to Adzel, bright to a native—on sleazy garments, avian faces, unwinking eyes. Padrick set down his flag and raised his hands. "Peace between our kindred," he called. "You know me, Hugh of the Household, I've stood many a round. This is the Emperor's guest. He's big but gentle, and no demon's trailing him. Any demon 'ud be scared to."

A drunk in a corner cackled laughter. That eased the atmosphere somewhat. The customers returned to their drinks, though they kept looking sideways and doubtless their mutterings were now chiefly about this dragonish alien. Padrick found a backless chair and Adzel coiled on the dirt floor across from him. The landlord gathered courage to ask what they wanted. When Padrick pointed to Adzel and said munificently, "Fill him up," the Ikranankan cocked his head, calculated probable capacity, and rubbed his hands.

The brandy, or gin, or arrack, or whatever you wanted to call a liquor distilled from extraterrestrial fruits, was no more potent than concentrated sulfuric acid. But it had a pleasant dry flavor. Adzel tossed off half a liter or so. "I must not be greedy," he said.

"Don't be shy. This is on me." Padrick slapped a fat purse. "We draw good pay, I must say that for him on the Beast."

"I have been wondering. Surely not all the Ershoka live in the Iron House."

"No, no. You serve there between getting your commission, if you do, and getting married. And

it's phratry headquarters. But families take homes throughout New City, or they go to one of our ranches, or whatever they like. After marrying, women usually lay down their arms. Men go drill once a year, and naturally join the colors in an important war."

"How then did Bobert Thorn's contingent dare revolt? Their families at home were hostage to the Emperor."

"Not so. If he touched a one of those left behind, we'd all rise, from Harry Smit on down to the youngest drummer boy, and set his head on a pike. But anyhow, a lot of the wives and kids went along. That's usual, if there's a siege or an extended campaign. Women make perfectly good camp guards, against these flimsy Ikranankans, and they're our quartermasters and—" Padrick finished listing their functions.

That wouldn't have been feasible, under such primitive conditions, if this were Earth. But few if any native germs affected humans. It made another reason why the Ershoka were prime soldiers. Before preventive medicine becomes known, disease thins armies more cruelly than battle.

"I sympathize with your plight," Adzel said. "It cannot be easy, when you are so close-knit, to be in conflict with your own relatives."

"Who said we were?" Padrick bridled. "That doddering Smit? The phratry bonds weren't so strong when he was growing up. He'd never get anyone my age to march against Thorn." He drained his beaker and signaled for more. "But seems the Iron House will obey its officers enough to stay neutral."

To change a difficult subject, Adzel asked if he had seen Stepha Carls since her return. "I sure to curses have!" Padrick said enthusiastically. "What a girl!"

"A pleasant, if impulsive personality," Adzel agreed.

"I wasn't talking about personality. Though truth, she's tough and smart as any man. Here's to Stepha!"

Beakers clunked together. Seeing the dragon so convivial, the house relaxed yet more. Presently an Ikranankan drinking buddy of Padrick's drifted over to his table and said hello. "Siddown!" the Ershokh bawled. "Have one on me."

"I really should return," Adzel said.

"Don't be stupid. And don't insult my good friend Rakshni. He'd like to make your 'quaintance."

Adzel shrugged and accepted more booze. Others came to join the party. They started yarning, then they started arguing about the Rangakora situation—not very heatedly, since nobody in Old City cared what happened to the parvenu Emperor—and then they had a short brawl between three or four cutthroats that broke the last ice, and then they began toasting. They

toasted their phratries and they toasted the memory of good King Argash and they toasted the Yanjeh River that kept Katandara alive and they toasted Lake Urshi that took charge of so many inconvenient corpses and they toasted Hugh Padrick often because he was buying and about then they lost track and the hexahedral dice commenced to rattle and all in all they had quite a time. Booze was cheap and Padrick's purse was full. The party ended at last more because a majority had passed out on the floor than because he went broke.

"I . . . mus' . . . really must . . . go back," said Adzel. His legs seemed more flexible than he preferred, and his tail had made up its own mind to wag. That demolished most of the furniture, but the landlord didn't object. He had passed out, too.

"Uh, yeh, yeh, reckon so." Padrick lurched erect. "Duty calls."

In a shrill unpleasant voice, Adzel said, "My friend, you have uh . . . hic! . . . wrong concep'. If you were at one wi' the universe . . . now please don' fall inna common error iden'ifying Nirvana with annihilation, matterfack's t' be achieved in this life—" He was no zealot, but he felt this fine chap reeling beside him deserved at least to have an accurate understanding of Mahayana Buddhism. So he lectured the whole way back. Padrick sang songs. Natives scurried out of the way.

". . . An' so," Adzel droned, "you see reincarnation not at all necesshry to the idea uh Karma—"

"Wait." Padrick halted. Adzel bent his neck down to regard him. They were near the gates of New City.

"Why, whuzzuh mazzuh?"

"Remembered an errand." The Ershokh was acting sober with unexpected swiftness. Had he really matched the others drink for drink? Adzel hadn't noticed. "You go on."

"But I uz jus' coming to the mos' in'eresting part."

"Later, later." Wind ran down the empty street, driving sand, and ruffled the bronze hair. No one else was in sight. Odd, thought Adzel hazily. The citizens had retreated from him before, but not to that extent. And there was no equivalent of night time; the same proportion were always awake.

"Well, thank you f'r a (whoops!) ver' inshuck . . . insturruck . . . insurrect . . . in-struc-tive 'shperience." Adzel offered his hand. Padrick took it hurriedly, almost embarrassedly, and loped off. The sword jingled at his belt.

A strange place, this. Adzel's thoughts turned sentimentally back to Woden, the dear broad plains under the green sun, where his hoofs spurned kilometers . . . and after the chase, the fellowship of the campfire, friends, children, females . . . But that was long behind him. His family having been

close associates of the League factor, they had wanted him to get a modern education; and he'd gotten one, and now he was so changed that he would never feel at home among the hunters. The females he didn't miss, being sexually stimulated only by the odor of one in rutting season. But a certain sense of belonging, an innocence, was forever gone. He wiped his eyes and trotted on, weaving from side to side of the street.

"There he comes!"

Adzel jerked to a stop. The space before the New City wall was a broad plaza. It swarmed with soldiers. He had some trouble estimating how many, for they kept doubling when he looked at them, like amoebae; but a lot, and every one a native. The gates were shut, with a line of catapults in front.

A cavalry troop bounded forward. "Halt, you!" shouted the leader. His lancehead flashed bloody in the red light.

"I awready halted," said Adzel reasonably.

Though uneasy, the Imperial zandaras were well-disciplined. They moved to encircle him. "Most noble," called the troop leader, in a rather nervous tone, "let us talk. Trouble is afoot and the Emperor, ak-krrr, desires your presence."

Adzel clapped a hand to his stomach—the scutes rang—and bowed. His neck kept on going till his snout hit the ground. That annoyed him, but he hung on to urbanity. "Why, sure, any ol' thing t' oblizhe. Le's go."

"Uk-k-k, as a matter of form only, most noble, the Emperor wishes you to, krrr-ek, wear these badges of dignity." The officer waved forward a foot soldier, who obeyed without visible happiness. He carried a set of chains.

"What?" Adzel backed off. His mind wobbled.

"Hold, there!" the officer cried. "Hold or we shoot!" The catapult crews swiveled their weapons about. One of those engines could drive a steel-headed shaft through even a Wodenite.

"Bu-bu-buh wha's wrong?" Adzel wailed.

"Everything. The demons must have brøken all barriers. Your associate has vanished, with a good score of Ershoka. When he learned this, the Emperor sensed treachery and had the Iron House surrounded. Those inside grew angry and would not surrender. They shot at our own people!" The officer ran clawlike fingers through his ruff. His cloak flapped in the wind, his zandara made a skittish leap. Crossbows cocked where lances were not couched, his troopers held their ring about the Wodenite.

"What?" Confound that liquor! And no anti-intoxicants on hand. Adzel thumbed the switch of his transceiver. "David! Where are you? Whuh happen?"

Silence answered.

"David! 'Merzh'ncy! Help!"

"Now keep still," the officer chattered. "Hold out your wrists first. If you are blameless, you shall not be harmed."

Adzel switched to the ship's wavelength. "Chee! You there?"

"Of course I am there," said the waspish voice. "Where else would I be but where I am?"

Adzel recited a tantra or two under his breath. The beneficent influence cleared some of his private fog. He blurted out an explanation. "I'll go 'long wi'm," he said. "Peaceful. You come in uh ship. They've got . . . they will have to lemme go then, an' we'll look f' David."

"At once," said Chee.

A squad of magicians made frantic passes. Adzel turned to the officer. "Yes, 'course I'll hic th' Emperor." From the radio came an indistinct mumble. Chee must be talking with someone else. He extended his arms and opened his mouth. It was meant for a smile, but it showed an alarming array of fangs.

The officer pricked the chain-bearing infantryman with his lance. "Go on," he said. "Do your duty."

"You do it," whimpered the other.

"What do I hear? Do you contradict an order?"

"Yes." The infantryman backed away. His mounted comrades opened a sympathetic way for him.

"Oh, come now," said Adzel. He wanted to see Jadhadi and get to the bottom of this affair as fast as possible. He sprang forward. The cavalry yelped and scuttled aside.

"But I on'y wanna help!" Adzel roared. He caught the soldier, removed the chains, and set him down again. The Ikranankan curled into a little ball.

Adzel hunkered on his tail and considered. The links had gotten fouled. "How yuh 'spec' me to fasten these?" he asked pettishly. The more he tried to unsnarl the mess, the worse it got. The Imperial army watched in fascination.

A shout broke from the transceiver. "Adzel! Get away! The unsanctified creature of unmentionable habits has caught me!"

There followed sounds of scuffling, a sharp blow, and nothing.

For a lunatic instant Adzel thought he was back on the ship playing Lord Love A Duck: seven-card stud, low-hole card wild. He had a trey in reserve, which with another trey on the board completed a royal flush, and he raised till his pay was hocked for the next six months, and then came the final draw and he got a deuce. The alcohol fumes blew out of him and he realized he wasn't actually in that situation. It merely felt that way.

The League trained its spacemen to react fast. He continued fumbling with the chains while his eyes flicked back and forth, assessing the terrain. Given a quick dash—yes, in yonder direction—and a certain amount of luck, he could make a break. But he mustn't hurt any of

these poor misguided souls, if that could possibly be avoided.

He gathered his thews and leaped.

A cavalry trooper was in his way. He scooped the Ikranankan up, zandara and all, and threw him into the detachment of spearmen beyond. Their line of grounded pikes broke apart. He bounded through. Yells exploded around him, with a sleet of crossbow quarrels. A catapult shaft buzzed his ears. The mounted officer laid lance in rest and charged from the side. Adzel didn't see him in time. The steel point smote. It didn't go in, but met the radio at the Wodenite's throat and smashed the case open. Adzel brushed past, still gathering speed. The zandara spun like a top, the rider went off in an arc.

A blank wall loomed ahead, four stories high. Adzel hit it at full velocity. Momentum carried him upward. He grabbed the verge and hauled himself over. The rough-surfaced stones gave sufficient grip. A catapult bolt struck by his flank, knocking out splinters of rock. Adzel crossed the roof, jumped to the next, dropped into an alley, and headed back toward Old City.

No help for him there, of course, except that he'd be hard to track through that maze. He'd get to Lake Urshi. They had nothing to chase a swimmer but clumsy rafts that he could easily outdistance. Once on the far shore, he'd strike across The Chakora. No word could reach Haijakata ahead of him. But damn the loss of his transceiver!

Well, Chee's would serve, after he'd bailed the little fluffbrain out of whatever trouble she'd gotten into. They'd raise ship, retrieve their flitter at the palace, and start looking for David. If David was alive. If they themselves stayed alive.

VI

Perhaps there was something to the Katandaran theory that supernatural beings were uniformly malevolent. If Chee Lan had been aboard the spacecraft when Adzel called—But she herself, an uncompromising rationalist, would have said her luck, though bad, involved no great improbability. She had been spending almost half her time with Gujgengi. Both were anxious to learn as much as possible about each other's civilizations.

One new idea she introduced, not entirely to his liking, was that of regular appointments. Haijakata's lone clock kept such slapdash time that she presented him with a watch. After that, drums rolled and flags got replaced to signal a change of guard with some predictability; and she knew when to go uphill for another session.

The computer, which she had set to remind her, did so. "You might be more respectful," she grumbled, laying down her book. She had pret-

ty well convinced her shipmates that the Cynthian volumes she had along were philosophical works—in fact, they were slushy love novels—but still she enjoyed the chance to read without inane interruptions.

"You did not program me to be respectful," said the mechanical voice.

"Remind me to. No, cancel that. Who cares about a machine's opinions?"

"No one," said Muddlehead, which did not have rhetorical units.

Chee hopped off her bunk and made ready. Transceiver and taper in one hand, a ladylike needle gun at her waist, were all she needed. "Standby orders as usual," she said, and went out the lock.

Muddlehead hummed quietly to itself. Standby meant that, although the Katandaran language had been added to its memory bank, it would only obey commands—voice, radio, or code—from one of the crew. However, Chee had connected the external speaker, in case she ever wanted to ask from the outside what the sensors observed.

The entry valve locked behind her and she scampered down the ramp. One hatch remained open immediately above the landing jacks, for an extra bolthole. There was no danger of natives wandering in and causing damage. Apart from their awe of the ship, the hatch merely led to the empty No. 4 hold, which no Ikranankan could harm, and *Muddlin' Through* wouldn't operate the door from it to 'tween-decks for anyone but a crew member. Chee prided herself on thinking ahead.

The crimson sun was whiter and brighter to her eyes than to Falkayn's or Adzel's. Nonetheless she found the landscape shadowy, swore when an unseen twig snagged the fur she had spent an hour grooming, and was glad to reach the highway. And the air drank moisture from her nose like Falkayn drinking after a cruise when the Scotch gave out; and the wind was as cold as van Rijn's heart; and it carried from The Chakora scents of vegetation akin to creosote and Gorgonzola. Oh, to be back on Ta-chih-chien-pi, Lifehome-Under-Sky, again, in a treetop house among forest perfume! Why had she ever left?

Money, of course. Which she was currently not making, at a furious rate. She bottled her tail and hissed.

The sentries at the gate touched sword to beak in salute as her small form passed. After she was safely beyond, they fingered charms and whispered incantations. True, the newcomers had not caused any trouble so far, and in fact promised great benefits. But demons are notorious liars.

Chee would not have been surprised, or even offended, had she seen. More and more she was discovering how immensely conservative these Ikranankans were, how

suspicious of everything new. That accounted for their being still prescientific, in spite of a fantastically long recorded history. She hadn't yet developed any explanation for the attitude itself.

She sprang lithely among the plaid-woven huts. A female sat outside one, putting food in the mouth of an infant. To that extent, Ikranankans were like Cynthians. Neither had mammary glands, the young being born equipped to eat solid food. (Cynthians use their lips to suck, not suckle.) But there the resemblance ended. An Ikranankan's wife was little, ruffless, drab, and subservient. A female Cynthian, who must carry her cub through the trees—though not strictly arboreal, among endless forests the race has made the branches a second environment—is bigger than her mate, and every bit as tough a carnivore. Matrilineal descent is the norm, polyandry occurs in numerous cultures, and the past has known some outright matriarchies. Chee supposed that was why her planet was so progressive.

She popped in the door of the large cabin where Gujgengi had quartered himself. The envoy was seated at a table with his host, garrison commandant Lalnakh. They were playing some game that involved dropping colored sticks onto a board divided in squares.

Chee soared to the table top, nearly upsetting the frail wicker structure. "What's that?" she asked.

Lalnakh scowled. Gujgengi, more used to her unceremonious ways, said, "It is called *akritel*," and explained. The rules were rather complicated, but in essence the game amounted to betting on how the sticks would fall. "Quite popular," Gujgengi added.

"Do you want to make your play?" Lalnakh snapped.

"Indeed, indeed. Give me time." Gujgengi adjusted his spectacles and pondered the distribution of rods that had already been dropped. The less likely a configuration he made, the more he would win; but if he failed to get a score within the range he declared, he would lose correspondingly. "I do believe my luck is normal today," he said, nodding at the stack of coins already before him. A Galactic would have spoken of a run of good luck. "I will try to—" He chose his sticks and made his declaration.

"You shouldn't guess," Chee said. "You should know."

Lalnakh glared. "What do you mean?"

"Not the actual outcome," Chee said. "But what the chances are. Whether the chance of winning is good enough to justify the bet you make."

"How in Destruction can that be calculated?" Gujgengi asked.

"Play, curse you!" Lalnakh said.

Gujgengi rattled his sheaf of sticks and let them drop. He made his point.

"Arrr-k!" Lalnakh growled. "That does for me." He shoved his last coins across the table.

Gujgengi counted. "You appear to owe more," he said.

Lalnakh made a vile remark and fished in the pouch below his doublet. He threw a dull-white disk into Gujgengi's stack. "Will you take that? Rangakoran work. I've carried it for a talisman. But the demons were too strong for it today."

Gujgengi wiped his glasses and squinted. Chee had a look herself. The medallion bore a pleasing design, a wreath on the obverse and a mountainscape on the reverse. But part of the silver had rubbed off. "This is plated bronze," she said.

"An art they have there, among others," Gujgengi replied. "They put the metal in a bath and—I know not what. Strong magic. I was there once on an embassy, and they had me grip two copper threads coming out of a box, and something *bit* me. They laughed." He recollected his dignity. "But at any rate, being so magical, objects like this are prized. That makes yet another reason why the conquest of Rangakora is desirable."

"Which we could accomplish for you," Chee pointed out. "And, incidentally, we can sell you any amount of plated stuff ourselves."

"Ak-krrr. Understand, most noble, I have no authority to make so momentous a decision. I am simply the Emperor's representative."

"You can make recommendations, can't you?" Chee pursued. "I know messengers go back and forth all the time."

"Uk-k-k, indeed. Shall we continue our previous discussions?"

"I'm going," Lalnakh said surlily.

That was when the transceiver spoke.

"Chee! You there?"

Adzel's voice, in badly slurred Anglic. Was the big slubber drunk? Chee hoped no Ershoka were present. Her skin prickled. "Of course —" she began, more acridly than she felt.

Lalnakh sprang aside, yanking out his dagger. Gujgengi rose and made industrious signs against evil. His glasses slipped off his beak to interrupt him.

"What the plague is this?" Lalnakh demanded.

"Where are my spectacles?" Gujgengi complained from the floor. "I cannot see my spectacles. Has a demon run away with them?"

"Protective magic," said Chee quickly in Katandaran, while the radio muttered with noise of a large crowd. "Nothing to fear."

"Help me find my spectacles," Gujgengi quacked. "I need my spectacles."

Lalnakh swore and retrieved them. Chee heard Adzel out. Her fur stood on end. But the self-possession of trouble came upon her, and her mind raced like a cryogenic calculator.

"At once," she said, and looked at the Ikranankans. They stared back, stiff and hostile.

"I must go," she said. "My magic has warned me of trouble."

"What kind of trouble?" Lalnakh rapped.

Gujgengi, more accustomed by now to outworld marvels, pointed a lean finger. "That was the monster's voice," he said. "But he is in the capital!"

"Well, yes," Chee said. Before she could improvise a story, Gujgengi went on:

"That must be a thing for speaking across distances. I had begun to suspect you possessed some such ability. Now, now, most noble, please do not insult me by denying the obvious. He has called you to his assistance, has he not?"

Chee could only nod. The Ikranankans trod closer, towering above her. She didn't want to be caught, later, in an outright lie; bad for future relations, which were ticklish enough already. "The Ershoka have rebelled," she said. "They are barricaded in the, what you call it, the Iron House. Adzel wants me to come and overawe them."

"No, you don't," Lalnakh told her; and Gujgengi: "I am distressed, most noble, but since your fellows arrived at the palace, I have been sent explicit orders that your conveyance is to remain in place."

"Sandstorms and pestilence!" Chee exclaimed. "Do you want a civil war? That's what you'll get, if the Ershoka aren't brought into line, and fast." The racket from the radio grew louder. "Use your judgment for a change. If we wanted Jadhadi's ruin, would I not sit here and let it happen?"

They paused. Lalnakh looked uncertain. Gujgengi scratched beneath his beak. "A point," he murmured. "Yes, a distinct point."

The set broke into a roar. Metal belled, voices howled, thuds and bumps shivered the speaker. A thin Ikranankan cry: "Help, the beast is killing me!"

Lalnakh started. Sunlight slanting into the gloomy room touched his knife with red. "Is that friendly?" the officer said, low in his throat.

Chee pulled her gun. "Some misunderstanding," she chattered. "I true-speak that we are your friends, and I'll shoot anyone who calls me a liar." Adzel's mild basso hiccuped forth, above an iron rattle. "Hear that? He isn't fighting, is he?"

"No," Lalnakh said. "Feeding."

Chee poised on the table. "I shall go," she stated. "I suggest you do not try to stop me."

Gujgengi surprised her. She had taken him for a mere bumbling professor. He drew his sword and said quietly, "I am a Deodakh. Did I fail to try, they would read my ghost out of the phratry."

Chee hesitated. She didn't want to kill him. That would also louse up future negotiations. A disabling shot?

Her attention was distracted from Lalnakh. The officer's hand swept through an arc. His knife smashed into her weapon. The impact tore it from her hand. He threw himself over her. She had barely time to cry a warning, then she was on the floor, pinioned.

"Hak-k-k," Lalnakh grated. "Keep still, you!" He cuffed her so that her head rang, snatched off her transceiver and threw it aside.

"Now, now," Gujgengi chided. "No violence, most noble, no violence until we learn whether violence is necessary. This is all most unfortunate." He saluted Chee, where she lay in Lalnakh's grasp. Simultaneously he crushed the radio under his foot. "I shall dispatch a messenger at once. Until word comes, you shall be treated as honorably as circumstances allow."

"Wait a bit!" Lalnakh said. "I am the garrison chief."

"But my dear friend, it may conceivably turn out that some accommodation can be reached."

"I doubt it. These creatures are demons, or demon-possessed. But jail her any way you like, as long as I can inspect your security arrangements. What I am going to do is post a guard on that flying house. With catapults, in case the giant arrives, and orders to kill if he does."

"Well," said Gujgengi, "that is not a bad idea."

TO BE CONCLUDED

AN ENGINEER

An engineer is one who passes as an exacting expert on the strength of being able to turn out, with prolific fortitude, strings of incomprehensible formulae calculated with micrometric precision from extremely vague assumptions based upon debatable figures obtained from inconclusive tests and quite incomplete experiments carried out with instruments of problematic accuracy and by persons of rather dubious mentality, with the particular anticipation of disconcerting and annoying a group of hopelessly chimerical fanatics altogether too frequently described as the Corporate Staff.

In the Light of Further Data

It was the breakthrough discovery of the ages! Limb regeneration at last! It turned out two good to be true.

CHRISTOPHER ANVIL

Illustrated by Kelly Freas

Gatesburg, Ill., February 22nd. Dr. Richard Roswell, director of the Gatesburg Medical Research Center, announced today the realization of an age-old scientific dream, the regeneration of limbs and bodily organs, using implanted "tissue-seeds." Much interest has already been aroused by published reports of research in this field by Dr. Roswell and his associates. Beginning with studies upon tadpoles, and extensive experimentation on mice and hamsters, the method was last year proven eminently practical in the successful regeneration of the injured lower trunk of the elephant "Millie." Since then, it has been used successfully on chimpanzees. In answer to questions, Dr. Roswell expressed his belief that his tissue implants will in time come to be very widely used, particularly in the regeneration of teeth.

Harbridge, May 2nd. Dr. G. Puthrie Banks, dynamic, hard-driving president of fast-growing Oxnam Technological Institute, today addressed an audience of several thousand gathered to dedicate the new OTI Advanced Nuclear Research Laboratories. Calling upon the undergraduates present to "pursue the creative quest for excellence," President Banks pointed out that "nothing is more important than that the new generation of our nation's leaders prepare fully for the trials that lie ahead." President Banks added that "to so prepare, the most requisite need is the acquisition of true, accurate, and detailed factual knowledge. The sole source of such knowledge is Science. Thus, in a very broad and meaningful sense, we may say, 'The Source of Truth is Science'."

Harbridge, July 2nd. OTI President G. Puthrie Banks today publicly denied that he had said "Science is God." President Banks stated that the charge, made by a group of prominent clergymen, "evidently grew out of a misconstruction of a speech in which I merely pointed

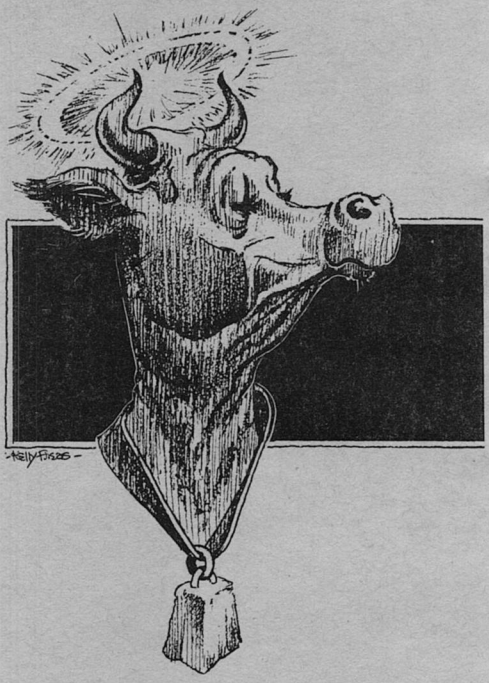
out what is perfectly obvious, namely, 'The *source of truth* is Science'."

Clinton, W. Va., October 4th. Doctors report that Lyell Smith, a forty-two-year old coal miner seriously injured in a mine cave-in, has recovered partial use of his left foot. The foot was regenerated by the Roswell implant method, and hopes are high that the operation will prove a complete success.

Ford Hill, Va., February 2nd. Dr. Raymond Schmeissner, of the Ford Hill Professional Dental Clinic, reports forty-six successful dental implants since the Roswell implant program was started last fall.

Camp Bedford, Pa., March 18th. Representatives of several interdenominational church groups today released the final draft of the "Bedford Declaration" which reads in part, "the Source of truth, today as in all ages, is not to be confused with any single channel by which a particular truth reaches man." This was believed to be a slap at OTI President Banks, who has proclaimed Science the "Source of Truth."

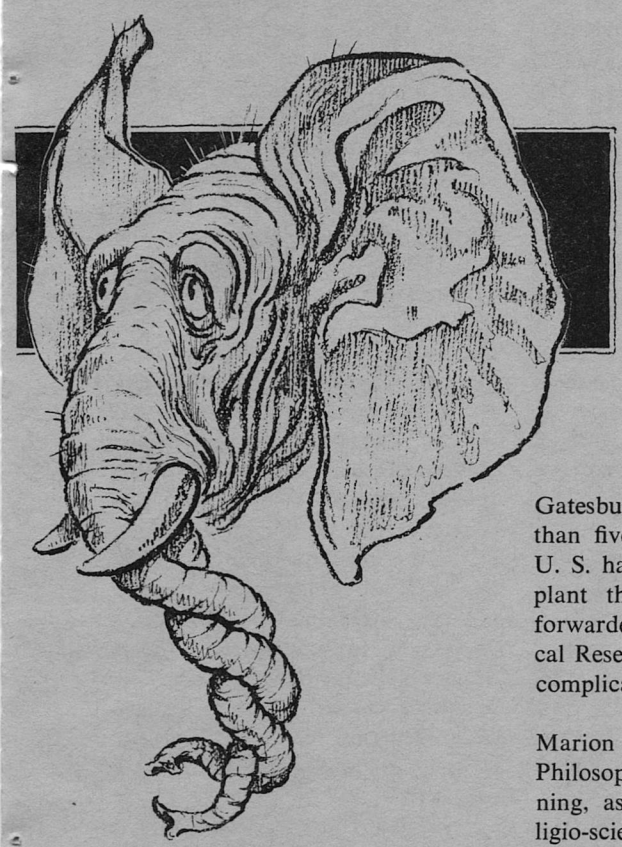
Gatesburg, Ill., August 12th. More than five hundred persons in the U. S. have undergone Roswell implant treatment, according to data forwarded to the Gatesburg Medical Research Center. Dr. Roswell's



most famous patient, the elephant Millie, is reported in excellent condition.

St. Louis, October 23rd. Dentists meeting here report using the Roswell implant method with "speedy and invariable" success to grow new teeth after extractions. The process is reported "more complicated but still very satisfactory" if some time has already elapsed, allowing the gum to heal where the tooth is to be implanted.

Harbridge, February 28th. OTI President G. Puthrie Banks, angrily replying to continued clerical criti-



cism, today charged that "certain religious so-called "leaders" must be strangers to the modern world. The distinctive flavor of modern living is clearly due to the unlimited application of the advances of Science. Why should we not pay due homage to the source of these great advances?"

Gatesburg, Ill., March 12th. More than five thousand persons in the U. S. have undergone Roswell Implant therapy, according to data forwarded to the Gatesburg Medical Research Center. No failures or complications have been reported.

Marion Springs, Ill., April 16th. Philosopher Michael James Henning, asked about the current religio-scientific controversy, stated that "truth, like the universe, has a number of different regions and aspects. The most expert familiarity with one region or aspect does not mean that an otherwise mortal man is omniscient." Philosopher Henning charged both sides with "airs of omniscience," but said that "Dr. Banks' extreme and widely-publicized position, in presenting science

as the sole source of worthwhile knowledge, could have peculiarly unpleasant repercussions in the event of some large-scale scientific debacle." Because of the growing predominance of "scientific and pseudo-scientific methods," Mr. Henning pointed out, "the probability of such a failure increases yearly."

Gatesburg, Ill., May 2nd. The Gatesburg Medical Research Center revealed today that over twenty thousand persons have benefited from Roswell implant therapy. Most of this work has been dental. All of it has shown "a degree of success close to one hundred per cent."

Harbridge, May 16th. Embattled OTI President G. Puthrie Banks, after a meeting with the trustees, stated today that he is "not opposed to religion as such," and that his statement that "Science is the source of truth," was not intended to mean that "Science is God." "Metaphysics and religion," Dr. Banks added, "have brought considerable solace to many persons in the past, and will doubtless continue to do so in the future."

Gatesburg, Ill., December 15th. The Gatesburg Medical Research Center revealed today that nearly two hundred thousand persons have profited from Nobel-prize winner Dr. Richard Roswell's tissue-implant therapy. Headquarters of the Gatesburg national Dental Crusade predict that in the coming year "nearly fifty per cent of those suffering the effects of serious dental deterioration will be restored to a normal condition" thanks to the Roswell treatement. The Crusade announced plans for the mass-treatment of school children, and reported "substantial success" in the initial phases of the national fund-raising drive.

Harbridge, January 19th. OTI President G. Puthrie Banks spoke this evening at the Northeast Regional Kickoff Dinner of the Gatesburg National Dental Crusade. President Banks pictured Science as "the source of that truth and power of action that has lifted man up out of the ruck of Medieval ignorance, poverty, illness, and despair. Once universally misunderstood, today Science goes forth like an army in magnificence and grandeur, led by such generals as Dr. Roswell, to conquer the ancient enemies of mankind."

Camp Bedford, Pa., March 4th. Angry spokesmen for the Bedford interdenominational conference accused OTI president Banks of "deifying science" and "mistaking a technique for a kind of benificient supernatural entity." Dr. Banks, the group charged, is "crystallizing the attitude, already painfully in evidence, that 'science can do no

wrong.' " Such an attitude, the Bedford group charged, is "emotional, partisan, and totally devoid of so-called 'scientific objectivity.' "

Harbridge, June 20th. First patient at the Gatesburg Crusade Clinic here was Dr. G. Puthrie Banks, dynamic president of OTI. President Banks declared that he has "one hundred per cent faith in the scientific method," and expects to throw away his dental plates in the near future.

Philadelphia, August 15th. The Gatesburg clinics in this city reported treating their fifty thousandth patient this morning. Implant therapy, the clinics report, is "fast and reliable."

Gatesburg, Ill., Sept. 30th. National Headquarters of the Gatesburg National Dental Crusade announced today that with incomplete reports on hand, the Crusade "has given over five million persons a new lease on dental health." Crusade spokesmen criticized "superstitionists" who "refuse to give their children permission to receive the benefits of this modern blessing."

Harbridge, October 6th. OTI's dynamic president G. Puthrie Banks today smilingly displayed a mouthful of new teeth, grown from transplants by the Roswell method. He cited the success as a measure of "the growing omnipotence of an expanding Science, which has enabled man to become master of the forces of nature in the modern world."

New York, December 10th. Sociologists report that according to recent surveys, research scientists have climbed to the number one spot in terms of public respect and admiration. Second are dentists, and third, physicians.

Gatesburg, Ill., March 26th. Crusade Headquarters announced today that through their intensive efforts, over fifteen million persons have "received the blessings of truly modern medical science." Charges of graft in the program have been strenuously denied.

Harbridge, May 16th. Dynamic, youthful OTI president G. Puthrie Banks, replying angrily to continued criticism from many clerical sources, today declared in his speech dedicating the university's new Roswell Medical Research Center, that "religion, metaphysics, and philosophy are outflanked, outmoded forces in the world of today. Today Science is the principal, if not sole, source and repository of useful knowledge and fruitful techniques."

Gatesburg, Ill., August 19th. Crusade headquarters announced today that over twenty million persons have attended the Crusade's clinics.

Continuing rumors of graft were branded "scurrilous and anti-humanitarian."

Grand Ferry, Iowa, September 16th. "Millie" the circus elephant, for years the favorite of children all over the country, provides a new and unusual attraction these days. Millie's trunk, the lower portion of which was regenerated several years ago by the Roswell implant method, for some weeks this summer was swollen and looked "peculiar." Millie's keepers were later dumfounded to discover that the Roswell-treated portion of the trunk was turning into twins, the two portions being joined at the base to the uninjured part of the trunk. Asked if they would seek veterinary care for the elephant, circus spokesmen said they see no need. "This way, she's a bigger attraction. The trunk don't seem to bother her, and she really draws people in." Both portions of the trunk move together, in exactly the same way, as if they were one.

Gatesburg, Ill., September 17th. Dr. Richard Roswell, when reached early this morning with news of the elephant Millie's twin trunk, stated that he was "appalled." Assured that the report was not a joke, Dr. Roswell stated that he will go to Grand Ferry at once to examine the elephant.

Grand Ferry, Iowa, September 18th. Dr. Richard Roswell, world-renowned medical-research scientist, today examined the circus elephant "Millie," one of the first large mammals to receive the Roswell tissue-implant treatment. Following the examination, Dr. Roswell, haggard and uncommunicative, left town immediately.

Gatesburg, Ill., September 19th. The offices of the Gatesburg National Dental Crusade are deserted today. It has proved impossible to contact anyone connected with the movement.

Clinton, W. Va., September 24th. Lyell Smith, 45-year old coal miner whose left foot was regenerated four years ago by the Roswell tissue-implant method, today told reporters that in recent weeks the foot has become red and swollen, "looks funny," and seems to "itch inside."

Gatesburg, Ill., October 6th. Dr. Richard Roswell today announced successful surgical removal, in a careful four-hour operation, of the extra left foot of a West Virginia coal miner who three years ago received the Roswell implant treatment to regenerate this same left foot. Doctors who have studied the case say the extra foot was "functional, but suffered from a lack of circulation." Dr. Roswell explained that the nerves and blood vessels branched at the site of the original

tissue implant, thus dividing the blood supply. Asked how the foot could have appeared normal for several years, and then in the space of a few weeks could have begun to duplicate itself, Dr. Roswell pointed out that "far more striking changes take place in the developing embryo," and the tissue-implant method "relies on related phenomena." There is, he said, apparently a build-up over the four-year period of "some chemical substance which triggers this second regeneration of the part or organ concerned." Asked if there would be yet a third such regeneration, Dr. Roswell stated that there was "as yet insufficient data to answer the question." Asked whether persons who have had their teeth regenerated would find themselves growing duplicate sets of teeth several years after the original regeneration, Dr. Roswell answered that he "would presume so. All the data point to it." Asked further how the condition could be corrected, Dr. Roswell replied that "surgical removal of at least one, and probably both, sets of teeth would be indicated."

Gatesburg, Ill., October 8th. A mob smashed and burned the deserted headquarters of the Gatesburg National Dental Crusade here last night. Today, National Guard troops with bayonets fixed surround the Gatesburg Medical Research Center to protect it against threatened violence. An estimated twenty-five million persons have received Roswell tissue therapy in the intensive drive following its first public use four years ago.

Washington, D. C., December 14th. A meeting of prominent physicians and dental surgeons broke up today without issuing any report. The meeting was originally called to make recommendations on "improving the medical image."

Gatesburg, Ill., April 14th. Dr. Richard Roswell today stated that "many reports now available prove conclusively that duplication of teeth follows the same pattern as twinning of other organs or parts." Dr. Roswell noted that at present the only satisfactory treatment is "extraction of the tooth prior to twinning, as the human jaw is peculiarly unsuited to the retention of two sets of teeth at the same time." Dr. Roswell admitted that extraction of the tooth "involves unusual difficulties," because the tooth, being still "perfectly healthy from the physiological viewpoint, resists extraction." That is, the tooth won't let go. Dr. Roswell expressed confidence in the new compound-leverage devices developed to deal with the problem. Dr. Roswell advised general anesthesia in all cases.

Camp Bedford, May 6th. The Bedford Interdenominational Leadership Conference today lambasted OTI president G. Puthrie Banks for

his "airs of omniscience that have led millions into a kind of dental purgatory that is just a foretaste of what lies ahead for those who rely exclusively on science to solve their problems."

Marion Springs, Ill., May 14th. Philosopher Michael James Henning today charged the controversial president of the Oxnam Technological Institute, G. Puthrie Banks, with a "disastrous misinterpretation" of the function and position of science in the modern world." Science, said philosopher Henning, is "said to be based strictly on observable facts. As facts are infinite, however, and the human mind, as we know it, is finite, we are immediately brought face-to-face with a dilemma. Even with the most advanced present or foreseeable devices and procedures, it remains impossible to take account of all facts, known or as yet unknown, which may be relevant to a given question. Thus a process of selection becomes absolutely unavoidable. Now, selection is a function of judgment, and judgment is not, and cannot be, strictly scientific. There is, then, *a nonscientific element in all scientific findings*. This nonscientific element is inescapable, at the same time that it is nonfactual and necessarily fallible.

"There are," philospher Henning concludes, "two lessons to be learned from this. The first is that as careful attention must be given to the use of good judgment as to the gathering of factual knowledge. The second is that Science, however useful, remains fallible. He who seeks an infallible and divine guidance must seek it elsewhere."

Washington, D. C., August 26th. Legislators here are disturbed by the rising tide of corrective operations, amputations, and extractions, needed to overcome the side effects of the Roswell implant therapy. These operations are already putting a visible strain on the medical and dental manpower of the nation, and it is bound to get worse instead of better as every living individual who has received the Roswell therapy returns for corrective treatment. Particularly troublesome is the enormous number of people who must, in the coming years, submit to multiple dental extractions. The present devices for carrying out these extractions on firmly-rooted healthy teeth resemble Medieval torture instruments, and dentists who have carried out extractions with them state that "an incredible amount of physical labor is involved. When a Roswell multiple-extraction is over with, we are exhausted, and the patient is a hospital case." Teeth grown by the implant method are reported exceptionally healthy and firmly-rooted, and one dentist has complained that it is "damned unnerving to find yourself trying to drag a chunk of

the patient's jaw out with the tooth."

Gatesburg, Ill., September 30th. Troops at the Gatesburg Medical Research Center here have been strengthened by another National Guard battalion. Brigadier general James C. Burns reported today. General Burns said that Dr. Roswell and his family are now living full-time inside the Research Center Inner Compound. Now that the Guard has sufficient strength to strongly occupy all the hills overlooking the Center, General Burns feels that incidents such as last Sunday's combination rifle and mortar attack, and the attempt on Tuesday to ram a homemade tank through the roadblock, will be much easier to handle.

New York, October 6th. Sociologists report that recent studies indicate a dramatic collapse in the public view of science and scientists. Research scientists, while not as far into the cellar as dentists, are now well below physicians at the bottom of the list.

Chugabog, Minn., October 12th. Little Chugabog Junior College, enrollment 126, announced today the appointment of Dr. G. Puthrie Banks, formerly of Oxnam Technological Institute, as dean of students. College spokesmen admitted that they had had "some reservations" about the controversial Dr. Banks, but that after a personal interview they believe he will "do well in Chugabog. After all, we are a forward-looking community, and as long as he doesn't go off on that science kick again, we feel he will be O.K."

New York, N. Y. December 10th. A team of physicians, bacteriologists, and dental surgeons, backed massively with private funds, are reported to have cracked the Roswell tooth-extraction problem. According to information released here today, a process of "intensive suppuration" creates "artificial abscesses" which ease the problem of later withdrawing the teeth from their sockets. "Of course," spokesmen admit, "this means that before the extraction, the patient will have multiple abscessed teeth in his mouth."

Washington, D.C., December 31st. Armed with "tooth-abscess generators" and motorized hydraulic compound-leverage extractors, the nation's capital tonight looks forward into the new year with as much hope and confidence as it can muster. An estimated ten million multiple extractions will have to be performed in the coming year.

Harbridge, January 4th. Dr. D. Bonham Moore, hard-driving president recently appointed to overhaul tottering Oxnam Technological Institute, today addressed an audience

of some fifty persons gathered to dedicate the new Oxnam Dental-Extraction Clinic on the OTI East Hill Campus. Dr. Moore called upon "any undergraduates who may be present" to "base their lives on the double foundation of experience and high principles and not chase off after easy generalisms." President Moore added that "obviously the acquisition of a new and useful method does not mean that everything else our forefathers built up in the preceding five or six thousand years is to be thrown on the scrap heap."

Chugabog, Minn., February 18th. Dr. G. Puthrie Banks, interviewed as he was carried out of the Chugabog Dental Clinic, admitted today that he intends to undergo training for the ministry.

Wan and pale, and speaking with some difficulty, the former advocate of unlimited Science explained:

"I feel that I may have misunderstood my calling." ■

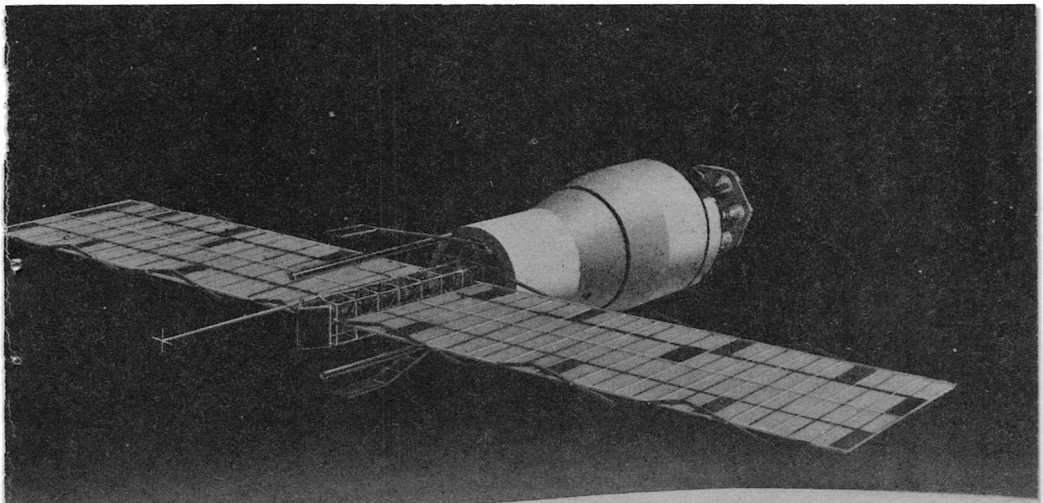
Desiderata Desired

The one-page item "Desiderata" in our March 1965 issue caused a number of readers to desire it. Some asked for permission to reprint it.

Since it was *found in Old St. Paul's Church, dated over two and a half centuries ago, it's been in the Public Domain—free for anyone's use—for well over two centuries.*

But that particular, special hand-type setting—we reproduced it photographically—was due to Ian Robertson, of the Graphic Arts Department, Colby College, Waterville, Maine.

Anyone wanting a copy for framing—about 10 x 13 inches—can get it from Mr. Robertson, at $1 a copy plus 25¢ for packaging. THE EDITOR



Pegasus meteoroid detector in flight
—artist's drawing. NASA—Marshall

Hands Full of Space

STEPHEN A. KALLIS, Jr.

I started in this science-fiction business thirty-five years ago; at the time I thought I knew what a vacuum was. So did physicists at the time. They still thought so in 1957. They are discovering that the gap between "almost nothing" and "nothing" is weirder than their wildest guesses had suggested!

In the early days of science fiction, those writers with the true "sense of wonder" likened man's forthcoming emergence into the regions between the planets—and ultimately, farther—to the first hesitant steps of a water creature onto the beaches of prehistoric Earth. In the process of evolution, the creature was entering a new environment, and in space travel, so would Man.

Just so, although little did they dream of what that would actually

imply. The stories were placed into this frame, and, with few exceptions, most of the properties of this new environment were not mentioned—partially because nobody had discovered them yet. Space was something like deep-sea diving, or high-altitude flying; that is, with a pressure suit, you could work in it fine, with only minor inconveniences.

There are literally thousands of aerospace engineers in this country who wish with all their heart and soul that that were the case. Unfortunately, it isn't.

To do a little science-fictional speculation, suppose that Man had never emerged from the sea. Suppose he had evolved into a race of underwater creatures with highly manipulatory members and a good-sized brain. What sort of technology would they have?

That would be hard to answer, but we might better be able to guess what type they would *not* have. The steam and internal combustion engines would be unknown, due to the conditions beneath the water that discourage both combustion and very high concentrations of heat. Metalworking, ceramics, and the like would probably—would almost certainly—not have happened, basically because these operations also necessitate heat and a fire technology.

Without digressing any further with speculations on our race of hypothetical aquamen, it is easy to note that the alien quality of the sea environment would necessitate a different technology; and the converse is true. Aquamen trying to explore "beyond" their world, in the waterless tracts of Air, would soon learn that some things that served them well under water would be useless in Air.

The same is true of space, although the very use of the word "space" to describe that stuff on the other side of the ionosphere is actually very loose and misleading. This is like calling that distilled stuff in a laboratory bottle, the stuff in the Arctic Ocean and the stuff spurted out of a Yellowstone Geyser "water," without making strong mental subclassifications. Space is varied, but more of that later.

First of all, we all know space is a vacuum. While strictly speaking, it isn't an *absolute* vacuum, it is far better than we can make artificially, at present. When I was young and callow, in high-school physics I saw my first bell jar vacuum chamber. When the air was evacuated to the point wherein a bell which was ringing was no longer heard, I, romantic soul that I was, thought, "Why, here is a little piece of space, before my eyes, in that bell jar." Fortunately, I was young enough not to know the Horrid Truth.

Neglecting gaseous composition, and starting from a pressure standpoint alone, what I was seeing was a piece of atmosphere approximate-

ly fifty miles above sea level—certainly below space regions. What we generally consider space is about another forty to fifty miles farther out—if we are thinking in terms of stable orbits. Radio engineers would even call *that* within the Earth's atmosphere.

We might as well get into a technicality here—a measure of pressure. In order to determine the atmospheric pressure, Torrecelli once measured it by balancing the air pressure against a captive column of liquid. When the pressures were balanced, the liquid would rise only so far in a tube. Above that, the sealed tube would contain—effectively—a vacuum. This is what became our barometer.

A mercury barometer at sea level conditions, will support a column of mercury in a sealed tube for 760 millimeters length above the surface. Atmospheric pressure was thus measured in terms of length—of a mercury column—760 millimeters of mercury being defined as "one atmosphere." The unit, millimeter of mercury, was named in honor of Torrecelli. Thus, "one torr" is by definition the same as "one millimeter of mercury," and standard atmospheric pressure is 760 torr.

A good bell-jar pump will produce a pressure of down to 10^{-4} torr, something on the order of one millionth normal atmospheric pressure. This might seem fairly empty, but space is ever so much more so. At less than four hundred miles altitude, the pressure is about 2×10^{-11} torr, nearly one ten-millionth of the pressure *within the bell jar.* Deep space—i.e., planetary space—may be hundreths of millionths less than the four-hundred-mile pressure. There are fantastic orders of magnitudes between that little bell jar and real space.

This actually makes a lot of difference. From a standpoint of pressurized cabins, the pressure difference between one atmosphere on the inside and 10^{-4} torr is practically identical to the pressure difference between one atmosphere on the inside and 10^{-27} torr on the outside, but we are not just interested in pressure differences; we need to see what such really low-pressure environments *do* to materials, if anything.

Anyone who has lived at different elevations has usually learned that even a relatively minor change in air pressure can make a great deal of difference. A housewife who is used to boiling eggs at a certain time rate, if living at the seashore, is very unhappily introduced to this fact if she tries the same thing at a higher elevation, say on a vacation in the mountains. After she has fished half-raw eggs out from her pot, she may begin to wonder just what it was that Mother didn't tell her.

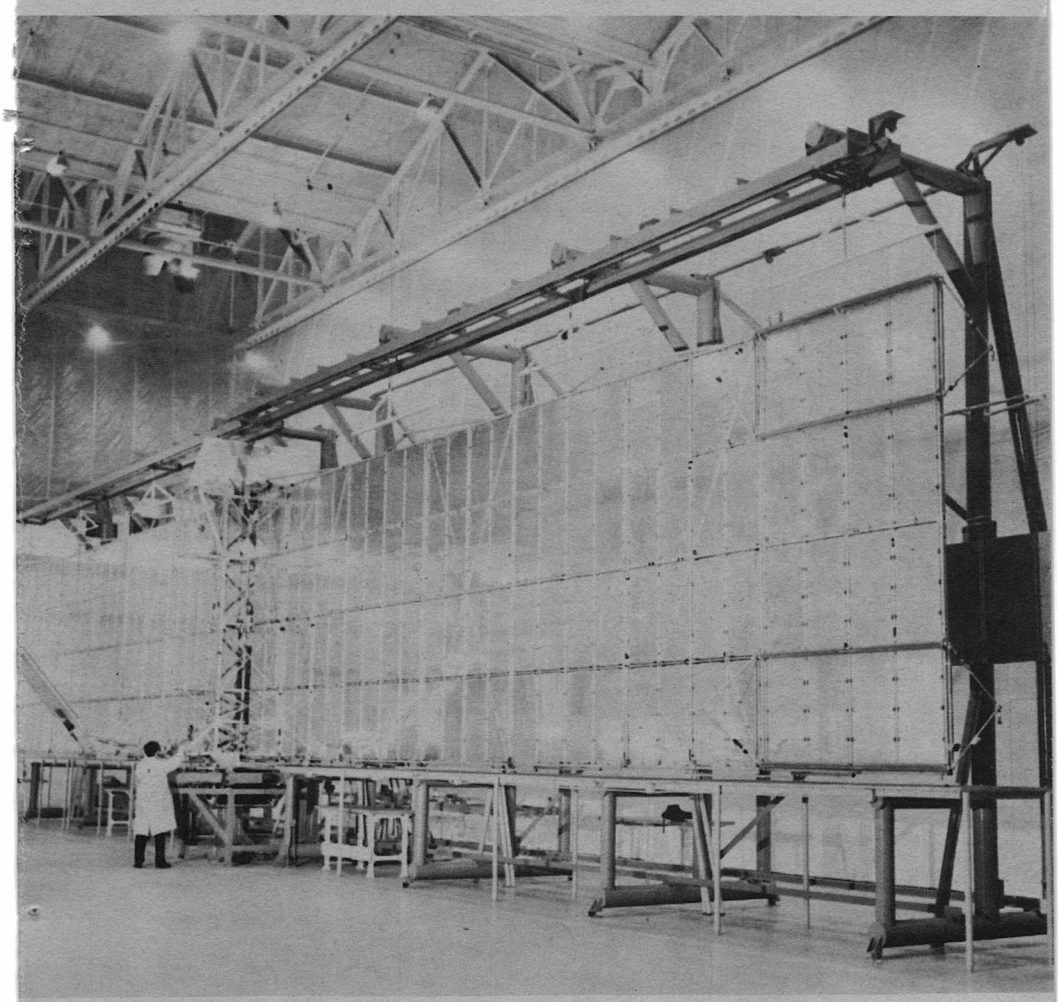
What Mother didn't tell her was about the effect that depressing the

pressure has on the boiling point of a liquid. A liquid boils at a certain temperature because it is at that pressure that the agitation of the liquid's molecules—caused by the temperature—is the same as the agitation of the surrounding gas molecules. This makes it possible for individual liquid molecules to leave the liquid and not return. Lowering the pressure makes it easier for the liquid's molecules to escape, for even with the same amount of agitation in the surrounding gas—assuming the same temperature—there are less molecules for the escaping ones to contend with. This means that the liquid's molecules can start escaping at lower temperatures, if they have to encounter less resistance. And the pressure difference necessary to do this to water and eggs is just a few pounds per square inch. (Note to campers: Not to discourage you, if you *must* eat boiled eggs and are determined to go to the mountains, pressure cookers will allow you to cook your eggs; pressure cookers work on the converse of this principle, anyway—raise the pressure on a fluid and you increase the temperature of its boiling point).

Obviously, in a very good vacuum there is little pressure; hence, the boiling point is very low for many substances. An example of this is batteries. Many batteries used aboard our spacecraft are wet-cell. If exposed to a vacuum environment, they could have serious difficulties, for batteries have to contend not only with ambient temperatures, but also with the fact that when they operate they generate heat. If we were to take a battery from a car, for example, and put it in a nonpressurized compartment aboard a space rocket for use as a power supply—this would not be done for other reasons, anyway, such as available power densities, but this is not relevant to our present discussion—and set a fairly light load on it, say thirty amperes, its electrolyte would rapidly boil away with increasing altitude, and fairly quickly the battery would put itself out of commission. Batteries for space work have to be designed somewhat differently from those we use.

You may have noticed the qualifying statement "in a non-pressurized compartment." The thought might immediately obtrude that the answer to this would be sealing the battery so that it would remain pressurized. This is actually done in our present space batteries, but with one refinement. Since batteries, especially batteries working under substantial loads, tend to produce gases when reacting, it is necessary to include a relief valve that will rid the battery of excess pressure.

It is, of course, sometimes impossible to keep everything in a pressurized environment. Parts of our spacecraft and space probes must be exposed to total vacuum; this is where much of our trouble lies,



NASA—Marshall

The Winged Horse's wings.
Pegasus is designed to detect and measure the meteoritic debris in space; the great area of wings, swept through space by its orbital velocity—plus Earth's—samples the number of meteors per cubic kilometer. The wing panels are of differing thicknesses, and thus allow a rough measure of the size of the particles detected.

and is what we have to cope with.

Boiling points are the points at which liquids turn to gases. Under some conditions, however, substances can turn into the gaseous state directly from the solid state; this process is known as sublimation. An example of sublimation can be found in the "evaporation" of dry ice; at atmospheric pressure and normal temperatures, dry ice—carbon dioxide, rather—can exist only as a gas. The solid carbon dioxide reverts directly to a gaseous state without passing through a liquid phase.

With the pressure sufficiently low, many substances that we normally consider stable will sublime. This is analogous to the lower boiling point for liquids at low pressures. These effects have strange consequences.

To digress a moment, when I first learned in school that all things were made of atoms, I was a little puzzled as to why no matter how hard I pushed my hand against something, say a wall, there would always be a crack between hand and wall; after all, atoms were supposed to be such tiny things—I thought that surely, if they could stick together to keep my hand whole, surely, they should stick to the wall. I thought that the line of demarcation shown by that crack should not be possible. Why are things separate?

Well, vacuum research has given us some of the answer, and in so doing has presented space engineers with another big headache, as if they did not have enough already.

Returning to our discussion of vacuums, what we have in space is a really *thin* vacuum. Many of the effects discovered in vacuum chambers have occurred only within the past few years, because until then our artificial vacuums were just not good enough.

The breakage point for what I am about to discuss occurs somewhere around 10^{-9} torr, for things heated to a temperature range one would be likely to find in an earth-orbit environment. (Aha! If any of you are thinking ahead, this is good; we will discuss this aspect of the thing later).

Every object on earth—that is exposed to the air at least—is covered with a certain amount of dirt, or moisture, or an oxide film, or perhaps a combination of these. In addition to the above, it may have adsorbed or absorbed gases or liquids near its surface. Cleanliness, on Earth, is not next to Godliness; it's more like next to impossible.

However, if we take one of these dirty objects and put it in a good hard vacuum, things begin to happen. At pressure levels below 10^{-9} torr or thereabouts, the boiling—or sublimation—point of these impurities—and sometimes the substance itself!—is reached, and those materials that can do so tend to migrate from wherever they were. This

tends to leave the substance *really* clean. (However, a soap company has already appropriated this classification for a deodorant soap, the virtually-100 per cent cleanliness is referred to by engineers as being "superclean" or "ultraclean". Shows what Madison Avenue can do). To the delight of any small boys who may be reading this, I can assure you that perfect cleanliness is something that space scientists can do without.

But why? What is so wrong about having things clean?

To take least cases first, such boiling and outgassing has the nasty habit of causing a cloud of contamination to occur in the area of the object from which they—the impurities—are escaping. If they cause loose pieces of material to go along with them—remember Colonel Glenn's "fireflies"—so much the worse. This cloud might not matter for some things, but, say, for a space-based observatory trying to conduct a minutely-exact spectroscopic analysis for a distant star—such stuff can render the research almost meaningless and worthless.

Well, that's bad enough, but cheer up—there's worse. Although pure research is of itself useful beyond measure, the more immediate problems of practical engineering demand answers to questions that this brings up relevant to our immediate future space goals; for how can you have pure research in space until you are set up in space with sufficient capability to do *any* research?

As you may recall, a little earlier, I digressed briefly to speak of why things did not stick together, and mentioned that oxides, moisture, dirt, et cetera, sort of coated things, thus keeping them separate. Well, once out in space, or in a space-type vacuum, when the impurities, et cetera leave the surfaces of objects, the objects are then in a position to share molecular bonds with each other; i.e., stick together. As a matter of fact, two plain, untreated surfaces that are ultraclean, if pressed together, can form excellent cold-welds at all points of contact.

It can become very unhandy to have all parts of two objects capable of sticking to each other. The effect in assembling a space station, for example, would be severe. Imagine trying to build a house of cards—in which all the cards are made out of stiff flypaper! I certainly wouldn't want to be the construction engineer on *that* little project!

These cold-welds are anything but weak. In a test of cold-welding quartz crystals via the vacuum-exposure method, recent results show that the weldment has approximately the strength of an ordinary crystal lattice bond.

Among other things, this caused serious troubles with relays. Relays are, of course, little electromechan-

ical devices which close—causing tips of conducting material to come in contact—when they are energized, and open when the energy is released. This is fine until you get into a space environment. Then the relay becomes ultraclean, and, if it has enough trapped gases to allow it to close, it welds, becoming a *permanently*-closed relay; something that is not always desired.

The relay problem can be solved two ways. Where possible, silicon control rectifiers can be used, but this is rare, because the other solution is easy enough. The relay is merely hermetically sealed in a little can full of an inert gas—often nitrogen—which prevents it from becoming ultraclean in the first place. You will find hundreds of these in industrial catalogues now. And you thought only *astronauts* needed spacesuits?

Of course, someone might feel that this ability to cold-weld might be useful in construction. This might be all right for airless devices, but in a space station or other place wherein air may be used, it looks more dubious. Not enough is known yet about wear phenomena to take the chance. If the air—especially in a space station which will have constantly-changing stresses as personnel change position inside—could insinuate itself into the areas of weldment, it might undo all the work, over a period of time. This will be known only after considerably more research. It is enough of a possibility to make us hesitate about using it; for what good is it to build a space station if filling it up with air for people to live in would encourage it to fall to pieces?

This, of course, brings up a closely-related problem—that of lubrication. After all—if ultraclean metals tend to bond to each other, then ultraclean bearings would. . . ? Yep. They tend to bind. Even where they don't bind fully, they have an absolutely horrible coefficient of friction.

What to do? The immediate answer to this is a good lubricant. But what is a good lubricant? If we hopefully suggest some of the more run-of-the-mill types, we stand a good chance of getting shot down in flames by some wiseacre critic. Perhaps the ingredient that most quickly springs to mind is a good oil or grease—then, remembering that we are thinking of a vacuum environment with its attendant evaporation phenomena, we amend this to say a good *low vapor pressure* grease or oil—as our answer.

Well, a low vapor pressure oil or grease *would* be reluctant to boil away. After coming in contact with ultraclean metals, it would be even more reluctant to do so. Tests show that in many cases an ultraclean metal can act as a sort of catalyst and cause the oil or grease to turn into a fairly hard gum or varnish. This example of gumming up the works is better than a full

weldment, but not much, and is certainly not welcome.

Someone with handyman experience might come up with graphite as the answer. Great stuff, graphite. A stuck doorlock yields readily to a puff of graphite powder. Wonderful stuff.

When I was in some chemistry class a long time ago, I was told that graphite worked as a lubricant because one of the four carbon bonds was considerably longer than the other three; thus, the carbon atoms formed stratified chains of molecules—planes of molecules that could slip easily over each other on account of being connected by a long—thus more easily broken —set of bonds.

Well . . . sort of. Vacuum research has modified the picture somewhat. Adsorbed moisture keeps the planes separated, and thus is responsible for graphite's slipperiness. If we take graphite and put it into a good space-type vacuum, all its adsorbed gases evaporate and outgas, and graphite becomes an excellent abrasive! This is about as welcome to someone trying to lubricate machinery as seasickness would be to a person afflicted with lockjaw.

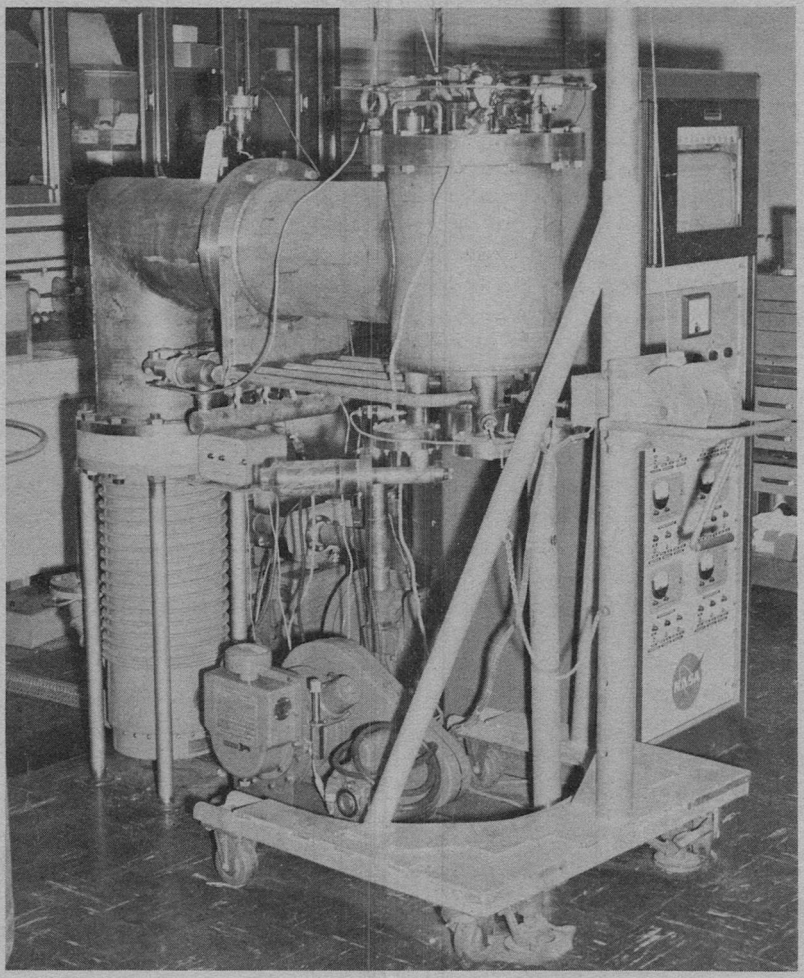
Actually, there are some answers to this problem. There are chemicals that work along the same manner as that of graphite, but which do not rely on adsorbed water. Molybdenum disulfide and barium fluoride, both known as dry lubricants, can be used for this purpose. And, in certain instances, soft metals such as gold and lead can be used, as they have fairly low shear strengths. Such lubricants, particularly molybdenum disulfide, are used by burnishing them to the surface of a metal, bonding it to metal with adhesives, or even impregnating solids which are porous.

The fact that there are solutions is fortunate, because if we have no reliable lubricants, it would prove a little rough on both our automatic equipment and on our later manned exploratory vehicles.

This, by the way, brings us into another hypothetical problem that has been bothering me for a long time. (I hope later events prove me wrong, but we should prepare for it, assuming that I am right.) It is lunar exploratory vehicles.

For some years, it has been surmised that the lunar surface is covered with a thick layer of dust. Well, some hedge a little and admit that it could be a *thin* layer of dust. Since the discoveries of materials behavior in ultraclean states, however, it seems likely that any dust that settled on the Moon would have welded itself to the surface and to other dust particles. One of the descriptions of the proposed lunar surface that this would cause is like "a very porous rock, crunchy underfoot."

Well, in one respect this is good news, if true, because we would



NASA—Marshall

First, space is a vacuum—a real vacuum. and some entirely new kinds of vacuum equipment had to be built. This one, used jointly by NASA and the AEC, is designed for testing what happens to plastics immersed in nearly pure nothing. The AEC then adds to the nothing, a sleet of high-intensity gamma rays from cobalt-60.

not have to worry about sinking out of sight when we touched down on the Moon—but how would it affect our exploration vehicles? Imagine the ultraclean wheels of our vehicles crawling across the ultraclean surface of the Moon! Since the lunar soil is, if present theories are correct, fairly porous, it would probably pull up and coat the wheel, somewhat as snow chunks rolled across snow pull up more snow and become snowballs of great size. This would build up the wheels, until the motors could no longer turn the axles.

I hope my horrible idea is wrong, but if it is not, alternate methods of propulsion must be tried. At any rate, our *Surveyor*-type soft-landed space probes should really try an experiment of this type, just to make sure.

One avenue of approach on solving this problem is open. It has been learned that if there is no prolonged sliding contact, two pieces of metal can touch without welding, *if* they have been treated with some passivating process, such as anodizing. Sliding contact of any duration, however, will break the passivated layer, and *bang!* things will weld. Perhaps this will give us the key to weld-free wheels, however.

The sublimation of materials can have more serious and more subtle effects, however. When a solid surface loses molecules, some surface characteristics may be changed. One characteristic set that is worrying some scientists is that of thermal absorptivity and emissivity. This one is a long-range worry, however, rather than a short-range one.

Actually, all materials in a high vacuum environment at the temperature range we are used to will sublimate, however, the *rate* of sublimation is what will concern us, from a gross mechanical standpoint. The rate of sublimation is dependent on temperature, and is related, among other things, to the inverse of the square root of the temperature in degrees Kelvin. For ordinary structural materials, such as iron, this sublimation rate at Earth-orbit temperatures—which includes lunar space—is negligible. For instance, one would have to heat pure iron to 1,420°F in order to establish a sublimation rate of 10^{-5} centimeters per year.

But suppose we are not interested in gross mechanical standpoints. Suppose we are interested instead in the *surface* details of the material. After sufficient exposure to space, the most gradual sublimation will cause, even at the almost inconceivably minute amount at Earth-orbit regions, the surface fine details to change, and these might affect the characteristics thermal absorptivity and emissivity, as was mentioned earlier. This might sound highly academic, but it has a very real consequence in space flight. On Earth, there are three mechanisms through which a body stabilizes its

temperature—conduction, convection and radiation. In space, the first two are absent, leaving only radiation as the mechanism for temperature stabilization. An orbiting object beyond the atmosphere obtains heat from two sources: the intercepted sunlight and other radiation it receives, and from heat generated in its interior, if any. (In the case of an unmanned space probe, such heat is generated by batteries and other power systems; in the case of a manned expeditionary vehicle, the above are augmented by the not inconsiderable heat produced by the crew.) The only way the heat can be removed is by radiation.

This is no small thing. If you recall, the cabin temperatures in the *Mercury* space capsules were quite high. When injected into orbit, for example, the exit heat pulse caused the initial cabin temperature of the MA-9 Mercury spacecraft to reach 118°F. It slowly decreased to a value between 90°F and 100°F. When the ASCS—automatic stabilization and control system—115-volt AC converter was powered for an appreciable time, the temperature in the cabin rose to a maximum of 105°F. When this inverter was shut off, it took the capsule several orbital passes before the temperature had stabilized once more, now at a value between 85°F and 95°F.

With such a critical balance, the change in the absorptivity-to-emissivity ratio could be significant. It could, of course, be beneficial, allowing slighter emissivity; on the other hand, if it increased the absorptivity, the crew of a long-term space station could slowly broil to death. One consolation, though, is that this would be such a long-term thing that the crew could make repairs on the station, if need be—but such repairs take time and materials, all of which must be ferried up by rocket at some cost. Just another little headache for our space program.

Anyway, this sublimation of some metals can have a more serious set of problems than merely weldments. Some years ago there was the case of the Circuit With Ideas of Its Own. In the early satellites, when they reached space levels, the air usually leaked out, giving their interiors a nice hard vacuum to be filled with. However this exposed their printed circuit boards to a nice hard vacuum and all that *that* implies.

You see, sublimation will occur, but we are not talking any longer about the wide open spaces of deep space, but of a container that has managed to get filled with a good hard vacuum. (The chances of a sublimating molecule hitting an opening to the Great Beyond are *much* slimmer than the chances of the molecule hitting a nice solid interior wall. If the wall is cold enough, as half of them usually are,

the molecule will stick to it).

Amateur astronomers will know this already, but if you don't happen to be one, the way they put an aluminum coating on mirrors for telescopes is to put the mirror blank into a nice vacuum chamber—which doesn't have to be space-grade. They then heat aluminum until it sublimates in the—relatively—slight vacuum of the chamber. The aluminum molecules find a nice cold surface—the surface of the mirror—in their wanderings around the inside of the vacuum chamber. Since the mirror is colder than the sublimation temperature of the aluminum, the aluminum deposits itself, molecule by molecule onto the mirror surface. *Voila*! An aluminum-plated piece of glass.

We don't mind doing this with telescope mirrors, because this is the effect we wish to get, but we are not too happy about our circuits plating themselves around the insides of our satellites.

And what is worse, the circuits, unlike the telescope mirror aluminum, are not electrically neutral. In the case I am referring to, because there was an electrical potential between points of the circuit, the metal did not plate itself harmlessly on some neutral wall. It tended to re-form so as to satisfy the electronic urges of the situation. Therefore, instead of merely sublimating a bit, the metal replated itself between close-by areas of potential difference, until these areas were connected. In the jargon of the specialist, this produces what is known as a short circuit, thus knocking out the function of the satellite. The reactive jargon of the engineer to this condition cannot be printed here, if we wish to send this through the mail.

Thinking back, you might recall our relays and their little spacesuits. You might well ask why not put printed circuits into similar devices. Well, where possible, this is being done, but there are many times when this is not practical. Printed circuits are usually stacked pretty close together, and you would have to make a large container to encompass all of them. Then would be the problem of making one with sufficient thickness to withstand the pressure difference. No, it couldn't be of *minimum* thickness to withstand the pressure difference, either, because it would also have to withstand the acceleration forces (minor for manned flights—only 7 or 8 g's, but worse in unmanned rockets), and worse, the vibration forces during the powered portion of the flight (which, depending on the location of the printed circuits, can range anywhere from a few g's up to around 70!) in combination. With a small relay, this is not too bad, but with a large cluster of PC boards. . . ! Worse, we must have a reasonably high pressure, because this is not a neutral state, and the natural tendency of molecules to sublimate is augmented by the elec-

trical potential between points.

Hm-m-m. Well, what about coating the circuit boards with a substance so that the materials don't sublimate? Very good, but we run into complications here, too.

You see, while I said that metals sublimate to a certain extent in space, they do so at different rates. But I did not restrict sublimation to metals. It, of course, would be absurd to coat our PC boards with a metal that sublimated very little, because then we would prevent the PC board from short-circuiting itself by saving it the trouble. We could, of course, make our circuits out of metals that sublimated very slowly, but these aren't the best conductors, usually, or if they are conductors of merit, are very expensive—no real objection—and have critical uses elsewhere.

So, if we coat these things, we have to be careful what we coat them with. For example, suppose we put a light coating of plastic over them.

Well, vacuum research shows that many plastics tend to depolymerize in an ultrahigh vacuum, but mostly at the surface (attention, any science-fiction writers who may be reading this. I give you a story idea free gratis: the hero is being hunted to the death by the villain in deep space, fairly close to a sun. The hero has cleverly substituted a polymer plastic space helmet for the regulation helmet of the villain's. The villain closes in on the hero, and *whoosh!*, suddenly he's breathing space as his plastic helmet depolymerizes), so that the coating will soon be of little use.

The most widespread answer is to "pot" the circuit module in a thick layer of plastic or resin—it is embedded somewhat akin to a dragonfly in amber. This gives a thick enough coating so that very little depolymerization will take place.

It gives good results—for the electrical engineer. The item is a one-shot one anyway; there's no repair shop in space for us to send out to fix our probes and other automatic equipment, so it matters little if the circuit is encapsulated. But while encapsulation inhibits sublimation, it also adds weight to the instrumentation payload, thus adding another headache to the poor rocket engineer who is straining to trim every ounce that can be spared from the payload.

Well, this is certainly a large enough bunch of problems to confront a space engineer—you must be dedicated to be one of these—but certainly, now, this group, once mastered, ought to give him a good grip on space engineering. Shouldn't it?

I'm afraid I must answer yes—and no. It gives him a good *start*, but only that. Recall, I said that the sublimation rates depended, among other things, on the reciprocal of the square root of the absolute temperature. That means that we have

another factor to contend with on our deep-space missions: Distance from the sun.

As we move closer to the sun, the intensity of solar radiation increases. At the orbit of Venus, the radiation is approximately 1.9 times that of its level at Earth's orbit. This means, of course, that the temperature aboard our probe will go up; the bright side of the picture, if there is one, is that the farther away from the sun that we manage to go, the less the intensity is—e.g., at Mars' orbit, the intensity is only about 0.4 times that where we are.

Nature has made some indicators that illustrate this very nicely. They are called comets. Comets, we are told, are made up of loose rocky debris embedded in frozen gases and vapors. While far out in space, where the sublimation rate is very low, they hold together pretty well, and are effectively solid bodies.

A more mundane example of this, if you will pardon a slight digression, is that of ice. If you tried to orbit an ice cube around Earth, it would soon disappear; it would sublimate. The same ice cube orbiting Saturn, however, would exist indefinitely. As a matter of fact, there are indications that the composition of the rings of Saturn is primarily ice. And some of Saturn's airless moons are either covered with ice or are made out of ice.

Well, to return to the comets, which have ice in them, as they approach the sun, their mean temperatures rise. As they rise, the temperatures reach the sublimation points of various parts of the materials that compose comets. They begin to vaporize and turn into gases. The gases which the comet expels form the fuzzy part of the head and the long spectacular tail for which comets are so well-known. The closer in the comets come, the more gases are released, and the longer becomes the tail. (The tail becomes longer for other reasons, too, but we won't go into these here at the moment). A comet becomes a great indicator of the solar radiation gradient.

What is true for a comet is no less so for a space probe. While a space probe does not expel sufficient gases to form a visible fuzzy head or tail as it approaches the sun, it nonetheless gets hotter. A case in point is *Mariner II*, which scanned the clouds of Venus.

Mariner II swung in towards the sun on an elliptical path that would take it closely past Venus, but it did more than measure Venus—while en route, it made measurements of its own internal working parts, and of certain solar phenomena and telemetered the information back to Earth. Among other things it sent back was its temperature, which rose as it got nearer to the sun—but it raised to a temperature somewhat higher than had been expected. Could this have been a manifestation of surface-

changes mentioned earlier, that would perhaps affect its absorptivity-to-emissivity ratio? If so, the exploration of the inner planets—and I am thinking now mainly of Mercury—may need an extra engineering wrinkle or two before we can dare to send men.

If not, what else must we learn about thermal conditions in space?

Of course, our *Mariner* heading towards Mars has an easier time of it, as far as sublimation and other vacuum effects are concerned. Far enough out and some of our problems in this area disappear. But while these problems disappear, others obtrude.

In the case of our Mars-bound *Mariner*, it's a matter of energy available. The farther out from the sun we go, the less intense is the solar radiation. For items powered with solar cells, in particular, this makes functioning more difficult. In towards Venus, the temperature is worse, and the vacuum effects are more pronounced, *but* there is nearly twice as much energy available to power solar cells; conversely, outwards towards Mars, the vacuum effects are less pronounced, because of the lesser temperatures, but so is the available power—less than half of what it is in an Earth-orbit environment. This is especially galling because the farther away it gets the more power it should have to get information to us. (Of course, on the plus side, it will have less solar static to contend with).

This is a formidable enough array to make an engineer blanch, but our space engineers are a hardy type—they *have* to be. For while vacuum is the worst thing, in gross, that they have to contend with, it is by no means the only one. Oddly enough, much of what I am about to comment on next is more prevalent in near-Earth—or other planetary—orbits, and less so in deep space, though noteworthy there, too. I refer to such little goodies as radiation—both electromagnetic and particulate—and meteorites.

In the old days, when we thought of space, we thought of *empty* space. Actually, space is just chockfull of little nasties with which we have to contend. To take first cases first, I will begin with radiation.

Radiation, in the good old days, merely meant electromagnetic energy that traveled from a source outward. Nowadays it also means atoms, atomic particles, ions, and electrons as well. I believe this came out of calling electron emission in a Crooke's Tube "cathode rays," but whatever the source, there's little we can do about it now.

To take "classical" radiation first—since I already began mentioning it in regards to our Mars mission—there's a lot of it out there that doesn't reach us down here. That is because our atmosphere is opaque to certain frequencies; which is just as well for us—were it not, we couldn't live long. Some of them are deadly.

Wyle Laboratories

Second, space can also be direly cold, and hellish hot. This super-vacuum equipment at the Wyle Laboratories in El Segundo is designed to add that factor to the test. That ain't steam that's blowin' out there, bub! The puddle of fog on the floor, and the special protective suits, plus the frosted pipe, say it's cold.

These frequencies are of very short wave length—shorter than 3,000 Angstrom units. For the most part, the longer wave lengths get through. It is actually a very small percentage of the total radiation, but it can have effects that can be pretty serious.

As a matter of fact, the short-wave stuff is almost all we are concerned with, engineering-wise—save for the heat balance. Such radiation can affect the orbiting stuff several ways. Primarily, this radiation is a surface phenomenon, but in the case of the *really* short-wave stuff—such as gamma radiation—it can penetrate as much as ten centimeters into the surface—depending, of course, on materials.

Exposed surfaces, however, can be very important. These include optical and electro-optical surfaces and spacecraft coatings. Since spacecraft temperature control is sometimes accomplished through specially-formulated coatings, the bleaching of such surfaces can change the thermal properties of the paint, and thus the thermal equilibrium of a spacecraft.

This brings us to the area of the other class of "radiation"—that of particulate radiation. Both electromagnetic and particulate radiation share something in common—they both tend to discolor optical surfaces. The glass discoloration effects can be harmful, but are somewhat correctable.

Now none of these effects are immediate, but for example, *Explorer* 6 suffered a loss of power that was traced to its solar panels. The solar cells had been covered with glass, and over a period of a month or so, the glass seemed to have darkened, thus robbing the satellite of some of its power. Solar flare particles seem to have done similar dirt to *Pioneer V*.

Particulate radiation comes mostly from the sun, and much of it is trapped in the van Allen radiation belts. This radiation consists of electrons, protons, and some ions. Since this radiation is trapped, its concentration is somewhat higher than similar radiation in free space.

Impingement of particulate radiation can cause ionization, secondary electron emission, X-radiation, or combinations of these. Save for in the van Allen belts and other high concentrations of radiation—such as solar flares—though, particulate radiation does not seem to be too serious a hazard to space missions. Or so experience seems to indicate.

Particles of a higher order of magnitude—although much slower speed—covers the last part of our little discussion. These are the meteoric type.

Let's see. Back in the embryonic days of science fiction, the great hazard to space flight—outside of space pirates and similar nogoodniks—was that of meteors. We were all sophisticated enough to realize that meteors were not flaming

things that ripped through spaceships in orbit or traveling between worlds. It was the *atmosphere* that made them heat. It was cold rocks that would rip through our spaceships. Ah, for that lost sense of wonder!

Hm-m-m. For a really large meteor, if it hit a ship, the velocity difference would almost always be great enough so that it couldn't *possibly* tear through a ship. More likely, the meteor colliding with the ship at as many as thirty miles per second of velocity difference would merely convert itself and an equal or greater mass of ship material into a plasma, so violent would be the impact.

But we are not particularly concerned with large meteors—they are not that great a menace, as space is big and their distribution is relatively small. What we are concerned with is the problem of micrometeoroids—the microscopic dust that flashes through space at meteoric speeds. These particles, tiny as they are, colliding with solid substance form tiny pits, which relate to the normal component to the surface the micrometeoroid is striking.

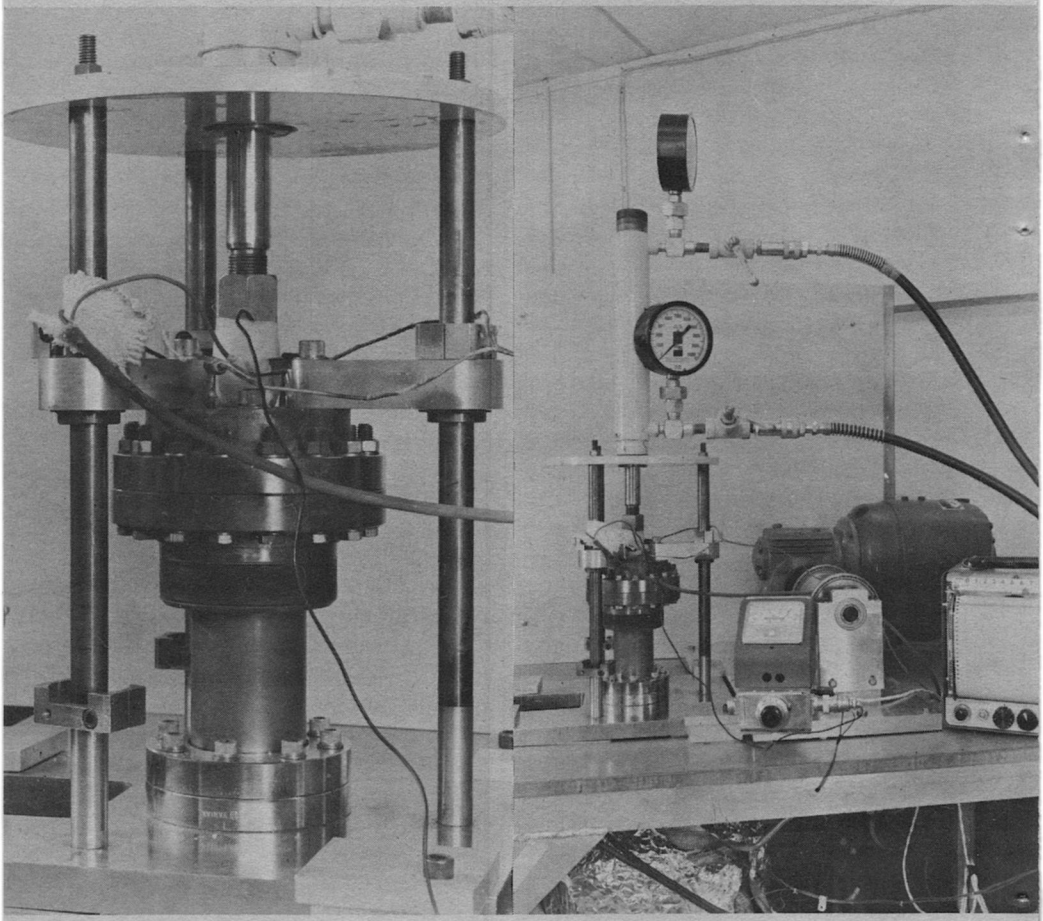
This, too, is dependent on the distance away from Earth. Just to make things more fun, Earth's gravitational field attracts the things, so there is a greater number of them close in than there is farther out. Again, the vehicle in a relatively close orbit has a worse time of it than one that is in interplanetary regions.

It is as if all the nearby stuff is a test—if we can make it through *that,* we are ready to take on anything. Perhaps it's good practice at that.

But enough of philosophy. The action of micrometeoroids has been likened to that of a sort of cosmic sandblast—some sandblast! When your sand is moving at a relative velocity of *miles* per second instead of feet per second, the difference is apt to be a little more than the difference between Tweedledum and Tweedledee.

Of course, one must also remember that compared to a sandblast, a normal rain of micrometeoroids is a pure vacuum. While more work needs to be done on getting an accurate reading of micrometeoroid density, the chances of being hit with a micrometeoroid with a mass of only 0.00001 *gram* is estimated at only once per one hundred days, for each square yard of surface—in a low Earth orbit. Unfortunately, this estimate is for an average—most of the time, it's better, but during meteor showers it could become much worse. While many satellites have weathered years of space service, *Explorer III* went off the air—permanently—during a meteor shower, and just before it ceased transmission, it measured a high rate of meteoroid hits.

Now, after all this buildup, what,



Vectors, Hughes Aircraft Company

Then there are problems of measuring what goes on in an ultravacuum. This gadget is a tensile stress-testing machine—operating on samples in an ultravacuum chamber.

Since ultraclean metals weld on simple contact, work had to be done studying at what temperatures, under how much pressure, and just how solidly what metals and alloys did weld. Hughes Aircraft Company did the work. . . .

you might wonder, does a micrometeoroid impact really do? Well, from a practical standpoint, it is very hard to say; not that we don't want to know, mind, but because it is very hard to accelerate particles to meteoric velocities in a laboratory. We must expect the micrometeoroids to strike the target at really high speeds: not a few miles a second, but actually multiples of escape velocity!

However, some work has been done on this. It has been possible to accelerate particles electrically to better than escape velocity and cause them to strike target plates. The results, extrapolated, can give us an idea of micrometeorite impact mechanics.

A tiny pellet of matter, then, rushing through a vacuum, encounters another unit of mass at a relative velocity of a spaceship in interplanetary orbit. The velocity is so great—the kinetic energy is so severe—that the strength of the materials involved is negligible by comparison. The energies of melting and vaporization play an insignificant part in the mechanics of penetration.

The results, however, are manifested in a hemispherical crater blasted into the object, and a plasma that disperses into space. The depth of the crater is dependent mostly upon a fractional exponent of the momentum and—it would seem *very* slightly—upon the density of the micrometeoroid.

The size of the crater is small by our standards—it, of course, depends, too, on the mass of the meteoroid—usually never enough to penetrate through a satellite's wall. Present estimates—averaged, and, of course, subject to change—suggest that to penetrate one-fifth of an inch of aluminum, a square yard would have to be exposed to space for twelve thousand days in low Earth orbit.

Then what is all the fuss over? Simply this: we are not only interested in penetration, but also in the surface of the space station, or what have you. Smaller meteorites will act on the surface, and can act as a sandblast inasmuch as they could change the surface characteristics of the material, thus changing its physical properties—temperature control, for example, or retaining a passivated layer.

Actually, this part of the question depends largely upon another question: how long is the object going to be used? Indeed, this question can be asked for radiation, too.

A human being can stand in a sleet of radiation—I have done it myself many times, when I have had my chest X-rayed. Continuous exposure to such levels of radiation would kill me, but for the brief time I was exposed, it was not fatal. Likewise, space environment.

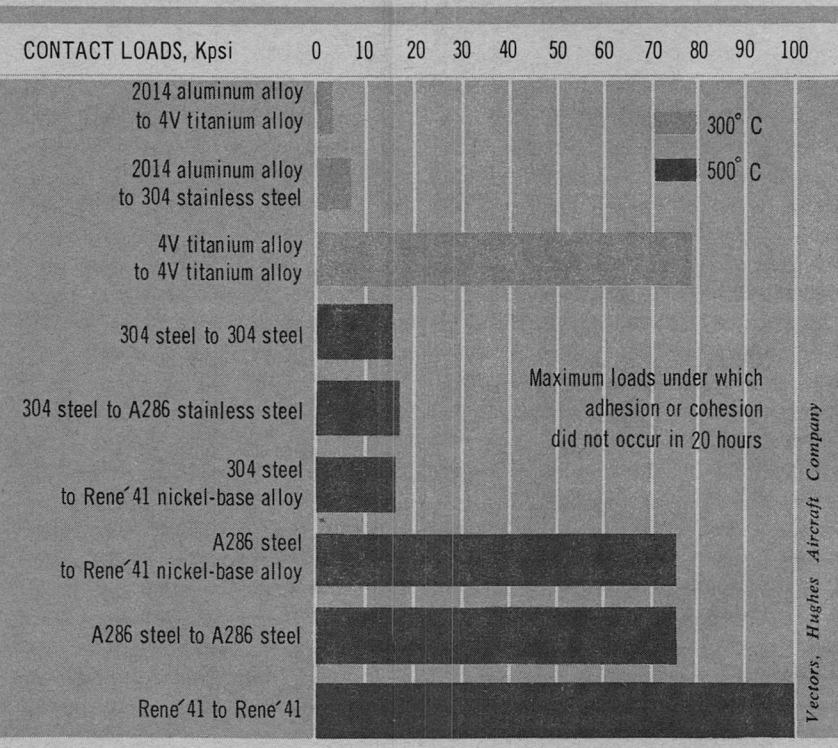
An optical system that several months of exposure to particles and ultraviolet would brown beyond use would be perfectly acceptable for

a three-orbit mission, or even a circumlunar mission. Walls that would not stand up under a decade of micrometeorite bombardment could be used for a month without harm.

The conquest of space, while not quite inevitable, looks as positive as tomorrow morning's sunrise. The space environment is hostile, but technologies are being developed to cope with it, as is to be expected.

But we are entering a new environment. It has gross differences from our more familiar environment, and, within itself, differences. But like our environment, this new one is governed by rules. The only way we can hope to win is to learn —and to play by—the rules of the game. ■

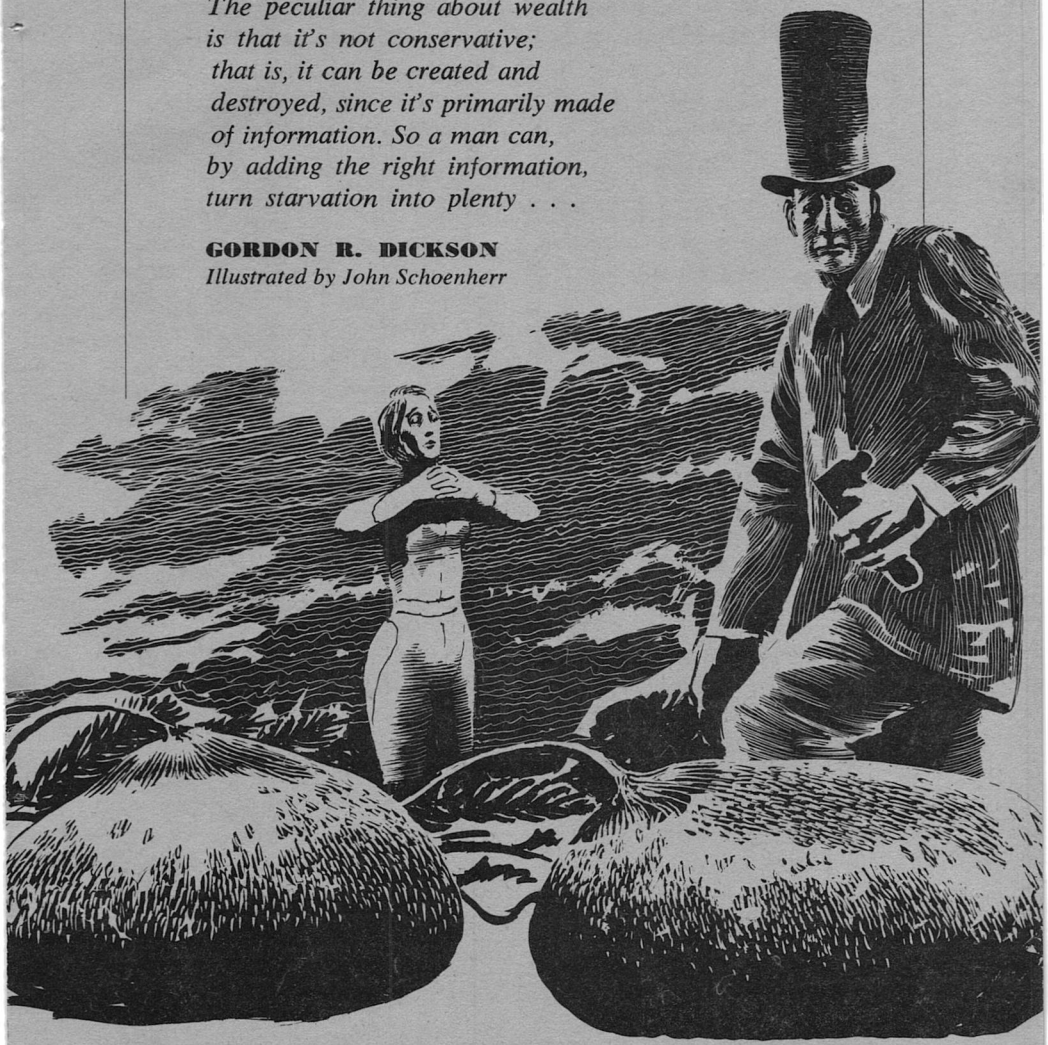
. . . with these results. From the graphs, it looks as though the most-adhesive of a pair determines the adherence, no matter what the other is—and that nickel is great stuff for use in space. But then—aren't asteroids made of nickel-steel alloy?



SOUPSTONE

The peculiar thing about wealth is that it's not conservative; that is, it can be created and destroyed, since it's primarily made of information. So a man can, by adding the right information, turn starvation into plenty . . .

GORDON R. DICKSON
Illustrated by John Schoenherr



The General Delivery window of the Space Terminal Mail Building on the world of Hemlin III, twenty-eight thousand four hundred and six light-years at Quadrant Two inclination nineteen degree to Theoretical Galactic Center, was small and lower to the ground than ordinary. World Scout Hank Shallo, who was outsize not only across the chest and shoulders, but also from boot heels to beret, was forced to stoop to look in.

"Any mail for . . ." his voice changed suddenly from its normal kettledrum tones to a bass coo, "H. Shallo, ship *Andnowyoudont*, Miss?"

"Just a second." The small brunette vision behind the window put down the bookviewer she had been holding and turned to code at the machine to one side of the window. There was a snick, a click, and several envelopes slid out of the machine. "Here you are, sir."

Hank accepted them, crushing them unseeingly in one large hand. "Thank you," he cooed, bassly, beaming at her. "Interesting book?"

The girl, back on her stool and with the bookviewer back in her hand, paused to consider his craggy features a moment. It was hard to tell, thought Hank, whether that was approval or something else he saw in her eyes.

"Yes," she said, briefly. Hank sighed.

"Been a long time since I had time to do any real reading," he said sadly. "World Scouts don't get the time. That's one of the troubles with being a World Scout."

"I take it," the girl said, "that you're a World Scout?"

"Yes," said Hank, simply, sighing again, "and a hard, solitary life it is." He inflated his barrel chest slightly. "Not the glamorous sort of life most people think it is, pioneering new interstellar areas, searching out new worlds where our people can dwell. Dangerous—yes. Glamorous—" Hank shook his head slowly. "No."

"I see," said the girl.

"Might I ask what the book's about? Perhaps I'll want to get myself a copy for my next long survey search."

"That might be a good idea," said the girl, "if you can read Middle French. It's about the fabliau."

"Oh?" said Hank. "Ah . . . fabliau, eh?"

"Yes, I'm reading it for my Doctorate thesis on the spurious and imitative tales that were circulated under Chaucer's name following the success of the Canterbury Tales in the fourteenth century. Many of them are based on the French Fabliau."

"Ah . . . yes," said Hank.

"You see, I'm a graduate student at the University here and this is a part-time job for me. Is there anything more I can help you with?"

"At the moment, no," cooed Hank. "No. But perhaps I'll be seeing you again."

He left, shoving the letters into his pocket unopened, and took a shuttle car into town. There he entered the first library he found and requested a book on the fabliau.

". . . In modern standard speech," he added hastily. The library machine burped and produced a bookviewer with spool inside. He paid for it and took it to a comfortable seat and put it to his eyes. FRENCH FABLES FROM THE MIDDLE AGES TO MODERN TIMES, he read. He grunted. So that was all the fabliau were. The title of the first fable in the book, he saw, was "Soupstone." He read it, put the viewer in his pocket and went back out to the Space Terminal Mail Building; where he leaned with one elbow on the railing outside the General Delivery window.

"Hello again!" he said, gaily.

"Hello, soldier," said the brunette, coldly.

"Soldier?" said Hank, astonished. "No, no. I'm a World Scout."

"So you told me," said the girl. Hank got the impression that her opinion of him had somehow taken a turn for the worse. "I suppose," she went on, heating up as she proceeded "it's part of your usual line. You must have a pretty poor idea of my intelligence to think I'd be impressed by a cheap lie like that. It just happens my uncle was a World Scout and there was no one I admired more, so I saw through you right from the start and I must say I think it's a pretty reprehensible sort of thing sneaking around to find out about my uncle . . ."

"Wait a minute. Wait . . ." pleaded Hank. "Your uncle was a World Scout? What was his name?"

"Chan Gremminger. And he died honorably in the line of duty . . ."

"I knew Chan Gremminger!"

"Oh, take your lies and this letter that came just after you left, and get out of here!" She slammed a stud on the machine beside her, scooped up the letter that popped out and threw it at Hank—then turned and marched off out of sight behind the wall in which the window was set.

Bewildered, Hank picked up the letter and looked at it. It was a very official looking letter, sealed with tape and official-looking stamps. It was addressed to Major H. Shallo Gen'l Delivery, Space Terminal Mail Bldg., Hemlin III.

"Wait a minute!" called Hank, sticking his head through the window. "It's just a reserve commission, and . . ." But the room behind the window was empty.

Slowly and sadly, Hank returned to his scout ship, the *Andnowyoudont,* out in its terminal parking spot. Safely aboard and seated in the control-board chair in the incredibly compact control-sitting-bedroom of the tiny but incredibly powerful ship, Hank broke the seals on the envelope and extracted its contents.

"Pursuant to approval by World Scout Headquarters, Key West, Earth (see attached copy) . . ." he read: and stopped to examine the attached copy aforesaid. It was, he considered on reading it, a nastily humorous memo from Janifa Williams, Assignment Director, WS HQ., with the humor so subtly veiled that only Hank could feel its bite. Oh, sharper than a serpent's tooth it was, thought Hank, to have a woman thinking you had scorned her. He had not scorned Janifa Williams, that time when he had been called back to Earth to be used in the publicity posters for the World Scout enlistment drive. He would never scorn such a magnificent specimen of blond womanhood.

He just hadn't wanted to give up the *Andnowyoudont* and settle down to a stuffy desk job back on Earth. Janifa could not understand that. Hank sighed. Now, in this memo, Janifa wrote that since H. Shallo WS 349275 had already proved himself capable of highly unorthodox, but equally highly effective action—another covert dig, that, in its reference to Hank's capture of the first of the Unarko aliens ever encountered by the human race *—WS Hq. was pleased to approve the activation and use of H. Shallo on the service required by the military authorities.

Hank turned back to the orders of the military authorities and became abruptly conscious of the true sharpness of the serpent's tooth. Military HQ wrote that a certain recently settled planet known as Crown World, Quadrant Two, inclination et cetera et cetera . . . had recently reported an emergency situation existing; and requested, as was their right under emergency conditions, immediate GO (General Overseer) aid. Under the circumstances (here followed half a page of circumstances that were so much official gobbledegook to Hank and were intended, he suspected, to be so) Military HQ felt that the emergency on Crown World was possibly of less seriousness than its few pioneering inhabitants believed. And since qualified individuals of GO rating were unavailable at the moment, it had been judged best to order temporary GO authority for Major H. Shallo and request that he proceed forthwith to Crown World and deal with the situation. Following this, he would contact Military HQ in reference to his report and deactivation. Et cetera.

Hank sighed. He could quite understand that GO (*Genius Only*, some were wont to nickname it) help was in short supply. To qualify for that particular government organization all you had to have were the equivalents of doctorates in five unrelated fields plus three years of special training and education. A young GO was usually pushing fifty. By sixty or seventy he was priceless

* *Sleight of Wit*, Analog, December 1961

and forcible retirement took him off just about that time. Just, thought Hank, when he was getting good at working miracles.

Stop and think about it, thought Hank, could he work miracles? No. Could he refuse the duty? No. Was it all Janifa's fault? Yes. Suddenly fired up by the thought of how Janifa would be expecting him to fail miserably, Hank sat upright in his chair. He'd show her! Or would he? He got up and looked in the mirror surface of the arms locker. The trouble was he didn't look like a GO. He was too . . . too healthy-looking, somehow. He thought for a moment and dived into his spare clothes locker, coming up with a somewhat battered top hat that belonged to a set of magician's tricks he had got interested in once. He put the hat on his head, and turned back to the mirror.

The effect was certainly not healthy-looking. The Abraham Lincoln style topper above Hank's square-jawed face produced an image just short of unbelievable.

"Eccentric," breathed Hank. He snatched up the book of French fables to complete the costume. "Fabliau," he announced squeakily to his image. "Done quite a bit of study of them. My special field. Yes. Soupstone. Henry Abraham Soupstone. What? My good fellow, of course! Been a GO for years. What's your problem? Tut-tut! Nothing to it. Let me examine the situation. Ah, yes . . ."

Why not, thought Hank, turning happily to the control board and ringing Terminal Field control for takeoff pattern. Didn't the Military HQ people think the problem on Crown World had been overstated? Probably nothing to it. Hank punched the location of Crown World into the memory bank of the *Andnowyoudont*'s library and sat back to await his takeoff pattern. He picked up the battered guitar by his chair, and strummed a G major chord.

"I'm just a poor, wayfarin' stranger . . ." he thundered horrendously, but happily, to the soundproof walls of his ship.

By the time he got to Crown World, he had read all the fables in the book. He found that he still liked the first one, "Soupstone," best, however. He had also made use of the *Andnowyoudont*'s library to find out as much as possible about GO methods of work and about the planet Crown World, itself. The dulcet tones of the library's auditory response circuit had not proved as soothing as usual on these topics. About all Hank had been able to glean about GO techniques, that a relatively uneducated character like himself could use, was the fact that a GO's greatest asset was the respect in which people held him. Never, said the library, quoting, should a GO allow the people he was helping to lose faith in his ability to solve their

problems. Hank made a note of that.

He also made a sober note of a fact he had not realized at first. Crown World was on the border of a Unarko area of newly developed worlds. The human and Unarko races were officially, and as a practical matter, at peace with each other—ever since Hank had brought back that one adult Unarko and the linquistic boys had cracked the Unarko language. Anything but official peace was out of the question. It was foolishness to think of not respecting each other's already settled worlds, or engaging in open conflict. Both races could bleed themselves to death and never come to any decisive conclusion trying to carry on a war on an interstellar basis.

On the other hand—there were other forms of competition beside those involving a shooting war. Both races went for the same sort of worlds. If the Crown World humans had to abandon that world and the Unarkos moved in, the result would be quite as effective as if the aliens had attacked and driven the humans off it. Out in the galaxy it was not a good notion to let things go by default. That could give the aliens ideas, and become a fatal habit.

Hank was still thinking seriously about this when the landing bell rang, and the library spoke to him.

"We are now down and a man appears to be awaiting you."

"Right . . . ah, yes," said Hank, snatching up his top hat and tucking the book of fables under his arm. He put a solemn expression on his face, opened the air lock, and walked through it and down the landing stairs. Waiting for him was a muscular young man with his sleeves rolled up and a fine tangle of brown hair showing at the bottom of the v where his shirt was unbuttoned at the neck. Hank could see the blue eyes under the unruly brown hair measuring the width of Hank's shoulders calculatingly, and recognized the character of that look. It was Hank's cross that he seemed to act a walking challenge to a certain pugnacious type of individual. It was something about the way he was built. Hastily, Hank moved to obscure this bad impression made by his appearance.

He simpered at the young man. It seemed to disconcert the other somewhat.

"*You're* the Go?" demanded the young man, scowling.

"Ah . . . indeed," oozed Hank, confidingly, "Hank Abraham Soupstone. GO for years now. Fabliau. My field. If you'd like to see my credentials . . ."

"Never mind that!" snapped the young man—deeply wounding Hank, who had prepared a beautiful set of Soupstone credentials on the way here. "Joe Blaine's my name. Come on. My slider's right over here."

He gestured toward one of the

high-cushion, air-support, open-bodied cars normally used for travel on new planets and backward areas where the terrain was rough. The turbine motor which produced the jet air cushion on which the device rode whirred alive and whistled up the scale into inaudibility as the sound baffles took over to protect the passengers eardrums. The car stank abominably of whatever local vegetative distillate was being used as fuel. With a jerk the thing started, and Hank clutched the seat beneath him as they shot forward toward some buildings in the distance at a breakneck speed.

"So you're GO?" shouted Joe Blaine—as they left the fused earth surface of the landing field for a plowed field. Crown World was apparently as yet too new to have roads. They were traveling at about a hundred and twenty kph.

"That's right!" shouted back Hank, smirking horribly into the wind of their passage and holding his top hat on with one hand.

"Then you know all about spugeons?"

"Ah . . . absolutely. Studied them for years!"

Joe's head jerked around to stare at Hank. Hank gulped, and grinned ferociously, hoping that whatever he had said that was possibly wrong, would be taken as a joke. Joe did not grin back. Hank made a mental note to look up spugeons as soon as he could get back to the *Andnowyoudont*.

"You do, huh?" yelled Joe. "How about Unarko aliens?"

"Fine!" shouted Hank, happy to be on a safe subject. He expanded on the matter. "Matter of fact I was the first human to meet one of them . . ." He broke off, seeing the stare of the Crown Worlder widen even more; and remembering suddenly that almost anyone on a Unarko frontier would know that a World Scout (naturally) had been the first to contact the aliens. ". . . In a manner of speaking!" Hank added hastily, grinning again.

It did not seem to go down too well. There was active suspicion now in Joe Blaine's eyes. Slowly, the young man turned his gaze back to the terrain ahead of them and no more was said until they penetrated in among the distant buildings and came to a stop before one large structure of fused earth some three stories tall and resembling an office building.

"In here," said Joe Blaine, curtly. He led Hank inside and up three stories of ramps on foot and through an empty outer office on the third story to an inside office. Inside the inner office were half a dozen men of various ages, generally as roughly dressed as Blaine.

"Here you are! How do you do, Mr. . . . er . . ." said a small, round man scuttling forward to shake Hank's hand.

"Soupstone. Hank Abraham Soupstone," said Hank.

"I'm provisional planet manager. Gerald Bahr. Let me introduce you —William Grassom, Arvie Tilt, Jake Blokin . . ." the introductions proceeded, ". . . and last but not least, my daughter and temporary secretary to our temporary management commission here, Eva Bahr."

"Charmed!" leered Hank. Eva Bahr was a pretty, smiling-faced, blond young lady in well-fitted yellow coveralls.

"I'm the one who's charmed— to meet a real GO, Mr. Soupstone," she said. "We didn't expect you to be so young."

"Can't be very young," said Blaine's voice in the background. "Been studying spugeons for years. Told me so himself."

"Joe!" Eva glared past Hank at the young frontiersman.

"Of course, Joe," said Gerald Bahr. "You must have misunderstood."

"No I didn't."

"Joe!" Eva's voice rose.

"No use saying 'Joe!" like that. I tell you he said it. Also said he was the first human to ever see a Unarko. Maybe we ought to look at his credentials after all, in spite of all your talk about manners and co-operating when he comes."

"Certainly not!" snapped Eva's father. "It's perfectly plain to me, even with you telling it, that he was kidding you, Joe."

"Ha-ha! Yes," put in Hank, hastily. "Ease the tension a little and all that—" He laughed again, poking Bahr in the ribs with an elbow.

Gerald Bahr laughed. The men beside him laughed. Eva laughed loudly with a silvery note of scorn in her voice, glancing at Joe. Joe did not laugh.

"Ha-Ha! Well," said Bahr. "Let's get down to business. We can promise you unanimous co-operation. Unanimous! There's not a man, woman, or child on Crown World you can't feel free to call on. Fifteen thousand souls are at your disposal."

"Thank you," said Hank, appreciatively considering Eva Bahr. He called himself back to order with a jerk, walked around a nearby table and sat down behind it. "Now," he said, frowning solemnly at them. "Your problem here is—?"

Everybody started to talk at once.

"Please!" shouted Gerald Bahr. The babble ceased. "The answer to that is," said the temporary little planet manager, to Hank, "everything. Our spugeons are rotting before we can process the juice from them. The Unarko expert they sent us can't or won't tell us how the Unarkos get around that with the spugeons they raise. It's a Unarko plant and nobody seems to know the answer. People think the Unarkos are just waiting to take over Crown World. Nobody wants to be on the planet management commission or be permanent Commis-

sion Chairman. Nobody knows how to run a planet. The First Bank of Crown World just had to close its doors. Spugeon juice distillate would be worth a fortune if we could ship some out, but because we haven't, other worlds won't give us any more credit. Tanker spaceships are ready to leave the planet, empty, and give up on us . . ."

"Ah, yes," Hank cut off the flow of words with a wave of one wide-palmed hand. He thought about what he had read about GOs from the *Andnowyoudont*'s library. The colonists waited expectantly. "I see," said Hank solemnly, "that a survey is required. Yes, I'll have to survey the situation."

A babble of relief commenced. Hank held up his hand.

"I must examine," he said, "the situation at first hand. First"—he thought for a second—"I'd better see one of your spugeon farms." His eye wandered in the direction of Eva Bahr. "If one of you could guide me—"

"I'd be glad to," said Eva.

"No, you don't!" said Joe.

"Why, I certainly will—"

"Now, now—" cooed Hank, rising and picking up from the table his copy of the French fables in their bookviewer. He tucked the viewer in his pocket and approached the two who were now glaring at each other. "We mustn't quarrel—" He placed a large and soothing palm on Eva's rigid right shoulder.

"Take your hands off her!" roared Joe and swung a fist from left field.

Hank, letting go of Eva's shoulder, shrank timorously under the fist. He heard it whistle past his ear and somehow managed to trip over his own feet so that he went blundering into Joe. One of his stumbling feet happened to come down on the instep of Joe's left foot while the other caught itself behind the young colonist's right heel. Caught off balance, Joe went over backward; and Hank, clutching clumsily at the other, somehow chanced to ram the three stiffened, polelike fingers of his left hand into the soft diaphragm area just below the notch of Joe's breastbone, while by sheer coincidence Hank's doubled right fist got between the floor of the office and Joe's head, just behind the right ear, as that head came down to the floor.

Everybody else in the room swarmed over Hank, apologizing, helping him to his feet, despositing him tenderly in a chair. Ignored, the still form of Joe Blaine unconscious on the floor.

"Water . . ." gasped Hank, feebly, his head nestled in the soft arms of Eva. They brought him water. He managed to sip a little, and smile weakly.

On the floor the discarded Joe began to show signs of returning consciousness. He stirred, muttered, opened his eyes and tried to sit up.

"Wha' happ'ned . . . ?" he muttered thickly.

"Oh, Joe!" gasped Eva, suddenly noticing the young man still lying on the floor. She started toward him, then suddenly checked herself. "Yes, you ought to ask that!" she blazed. "Attacking Mr. Soupstone like that. Serves you right if you fell down and hurt yourself!"

"We'll lock him up for you, Mr. Soupstone!" snapped Gerald Bahr, glaring at Joe.

"No, no . . ." said Hank, mildly, struggling to his feet from the chair. "Sudden outburst . . . can't blame him. Need every man." He turned to Eva. "Must go now. If you'll show me . . ."

"I most certainly will!" snapped Eva, glaring at Joe. "Lean on me, Mr. Soupstone, if you still feel shaky." They went.

"Oh, I hate that Joe Blaine!" cried Eva, some moments later as they were approaching the spugeon farm she had suggested as their destination. "I just can't stand him!"

"That so?" shouted Hank in answer, holding on to his top hat with one hand and the bucket seat of the air car with the other. Apparently it was the custom on Crown World to drive at full throttle over all natural obstacles in open country. Hank bounced as the air car hurtled a boulder too big to be handled by the air cushion alone. They were doing about a hundred and sixty kilometers per hour.

"It certainly is!" Eva shouted back. "I can't stand someone that opinionated. Someone who has all that ability and won't use it! People asked and asked Joe to be the temporary planet manager instead of Dad; but all Joe'd ever say was to ask them back—who was their servant last year? Did you ever hear of anything so selfish?"

"Well . . . ah . . ." hedged Hank.

"Neither did I! It's disgusting, especially when he's so brilliant. He's had five years of study in extraterrestrial agriculture; and he was one of the first to try spugeon raising when the seed became available. That was after the first Unarko-Human agreement last year—" she broke off suddenly. "But why am I telling you all this? You must know all about the Agreement."

"Not at all—not at all!" boomed Hank, genially. "I always say it pays to listen. You can always learn something new."

"Oh!" cried Eva. "If Joe only had one-tenth your open-mindedness. Your reasonableness! Your . . . oh, there's our destination!"

"Where?" asked Hank. But they were already shooting over a field of green vinelike plants blooming in orderly rows and with what seemed to be pumpkin-sized fruit among the leaves—except that the fruit was green and apparently thin-skinned and full of juice. In fact, the fruit resembled nothing so

much as enormous green grapes. Looking ahead, Hank saw a house and what looked like a cross between a barn and a greenhouse. A moment later the air car halted with a jerk before the farmhouse door. Somewhat stiffly, Hank left his bucket seat for solid ground, and followed Eva into the house. He found himself in what looked like a cross between a kitchen and a laboratory. A gnomelike, little, old man with a wrathful face was busy filling a small beaker with green fluid from a larger beaker. To one side sat what looked like a distilling outfit.

"Joshua," began Eva, "this is Mr. Abraham Soupstone. He's—"

The little man slammed down his beakers and began to jump around and wave his fists in fury at them.

"I know! I know!" he cried in a cracked tenor. "The GO. That father of yours phoned about him! Well, I don't need him! I need a truck! You hear me?"

"You know better than that, Joshua," said Eva sternly. "There won't be any trucks until Mr. Soupstone gets them running again. And even if there were trucks it's not your turn to have one pick up your crop until Tuesday."

"Tuesday!" screamed Joshua. "Do the spugeons have calendars? Can I tell them they have to wait to ripen till Tuesday?" Without warning he shoved the smaller beaker of green fluid at Hank. "Taste that!"

It was a small beaker with only a little liquid—perhaps a fluid ounce, perhaps less—in the bottom of it. Hank obediently tilted it up and swallowed it off—fingering to one side a sort of small pipette the old man had carelessly left in the vessel.

The liquid was delicious. He swallowed—and became suddenly conscious of both Eva and Joshua staring at him as if they had just been paralyzed. He opened his mouth to comment on their attitudes—and at that moment, his mouth flared, his esophagus glowed white-hot, and a small fission bomb —to judge by the feel of it—went off in his stomach.

Poisoned! thought Hank. He opened his mouth to gasp for water, but his vocal cords seemed paralyzed. Frantically, he gasped around the room for some sign of water, but saw none. His eyes lit on an empty beer bottle near the distilling apparatus. He made motions toward it.

"Beer—" he managed to husk, finally, forcing his tortured vocal cords into action. Joshua stared at him, went across the room, opened what seemed to be a refrigeration cupboard and produced a bottle of beer which he opened and brought back to Hank without a word. Hank upended it over his open mouth. Like all World Scouts he had fallen into the solitary habit of drinking his bottles of beer in single gulps—that was, one bottle of beer,

one gulp. But never had he poured a bottle down so gratefully. The fire went out.

"Well—" he started to say, and then blinked and paused as a sort of golden glow spread out over the room. The floor tilted slightly and he had a sudden impulse to sing, which he thwarted just in time. "Very good," he said, handing the bottle and beaker back to Joshua—and enunciating carefully.

"Must be," grunted Joshua, taking them. He looked significantly over at Eva. "I guess you're ready to solve all our problems now, aren't you, Mr. Soupstone?"

"Absolu . . . yes," said Hank, choosing the one syllable word by sudden preference. He added carefully. "You are not receiving trucks when you should?"

"My ripe spugeons are rotting on the ground, that's what!" snapped Joshua. "If I pick the unripe ones, they tell me they spoil in the warehouse. You tasted that superconcentrate of brandy! A fortune in spugeons here and I can't do anything with it, because they won't pick up the fruit when I say so."

"Understand," said Hank, woodenly and carefully, "Unark . . . alien secret spugeon grow—"

"Secret! That what they been telling you in town?" cried Joshua. "Unripe spugeons don't ripen off the vine. That's the secret! Get the trucks here when they're needed—that's the secret. And what're you going to do about it?"

"Fix," said Hank.

"How?" sneered Joshua. "Mind telling me? Huh?"

"GO method." Hank closed his teeth on an incipient hiccup and talked woodenly on through his teeth. "Soupstone technique. 'Veloped self. Can't explain." The golden glow around him was obscuring the room and the floor threatened to tilt under his feet. "Call on you in my official capacity. Write report on trucking failures. Deliver me at office. Good-by. Go now. Come Eva."

Without waiting for an answer from the girl, he turned carefully about and walked out the door. With only a little difficulty, so careful was he, he got back into the bucket seat on his side of the aircar. He was aware of Eva getting in on the other side with Joshua standing beside her.

"Josh—" said Hank carefully, but sternly through his teeth. "Expect report tomorrow without fail."

"You'll have it," he heard Joshua's voice float at him through the thickening golden haze. Hank slouched down in the bucket seat and tilted the top hat over his eyes.

"Must think. No disturb." He muttered aside to Eva. Invisible in the golden haze he faintly caught a comparable mutter from Joshua to the girl.

"The equivalent of a half liter of ordinary strength spugeon brandy," Joshua was muttering. "At a gulp.

And couldn't wait to chugalug a beer on top of it. You watch him."

"Certainly not!" Eva's voice answered. "How do we know how a GO thinks? It's probably all part of that Soupstone technique he was talking about!"

Telligent girl, thought Hank approvingly under the hat, and felt the aircar jerk into motion. Closing his eyes he relaxed and let the golden haze take him whither it willed.

He was vaguely aware of several stops after that. There was a man who had something to do with trucks who waved his fists and shouted about warehouses. A man who had something to do with warehouses who pounded a table and bellowed about a banking system. And a man who spread his plump hands and all but wept about the lack of planetary management and authority. Following this there was an extended blank period—followed by a bad dream about a Unarko who was trying to talk to him.

The Unarko insisted. Hank woke up. It was no dream. One of the thick-necked chinless and hairless aliens dressed in the usual bell-bottomed trousers and turtle-necked upper garments was bending over him, gobbling. A translation in human speech was coming from the black box on wheels alongside the Unarko.

Hank waved him aside and sat up on what he discovered to be the edge of a cot, set up in the office where he had met Eva Bahr's father and the rest, yesterday—he hoped it was only yesterday. Morning sunlight was coming in the windows on one side of the office. In that light the Unarko looked particularly unappetizing with his tentacle-like arms. Hank clutched at his head—but after a second took his hands away.

"No hangover!" he said wonderingly. He looked at the Unarko. "Who're you?"

The alien gobbled. "I am your" —the black box hesitated—"helperkin."

"What?" Hank stared.

". . . Helperette? Little assistant . . . ?" the box fumbled with the alien gobbles. It fell silent. The Unarko silently extended a microfilm viewer. Hank put it to his eyes and saw a letter. He read it, in a glance—brief as it was.

GENERAL OVERSEER DEPARTMENT
-Hq. Washington D.C. Earth

To Whom It May Concern:

Resident and management cultural experts being equated in Unarko culture with military experts, and their presence on the planet known as Crown World being therefore offensive to Unarko colonies already resident in the interstellar area, said experts are being withheld from said

world, and their assistance replaced by the assistance of an Unarko expert assigned to Crown World in the interests of interracial co-operation.

All assistance and courtesy should be extended by humans on Crown World to the Unarko expert bearing this letter.

Correspondent 5763
G.O. Hq.

It bore the proper three-ply, unforgettable, GO seal. Hank lowered the viewer and gazed thoughtfully at the alien.

"Ah," he said. "Oh-ho! Helperkin—why didn't you say so in the first place? Never mind," he added hastily. "As long as you're here, however, what do *you* think's wrong with Crown World and its spugeon farms?"

The alien gobbled. "The human race," said the box in its flat, mechanical tones, "lacks a thing—for which there is no word in human speech. It is a quality of the spirit required for spugeon culture without which there can be no success. Therefore, it is proved that here is a failure. Humans, go home."

"You don't say?" queried Hank rising, enthusiatically. "Just what I thought you'd say. Solves everything." Taking hold of the black box he wheeled it toward the office door, the alien perforce following. "Don't call me. I'll call you. Leave your name with my secretary." He opened the office door, and in the process of ushering alien and black box through it, saw that the outer room contained a desk with Eva behind it and Joe Blaine facing her. They were glaring at each other.

"Ah, my morning mail!" said Hank, happily, scooping up a stack of printed sheets he saw on Eva's desk. "Well, good morning, Joe! Eva, step into the office for a moment. See you in a minute, Joe. So long, ah . . . Helperkin. We must have lunch some . . . This way, Eva."

He got her inside and shut the door behind her.

"What's been happening?" he asked anxiously.

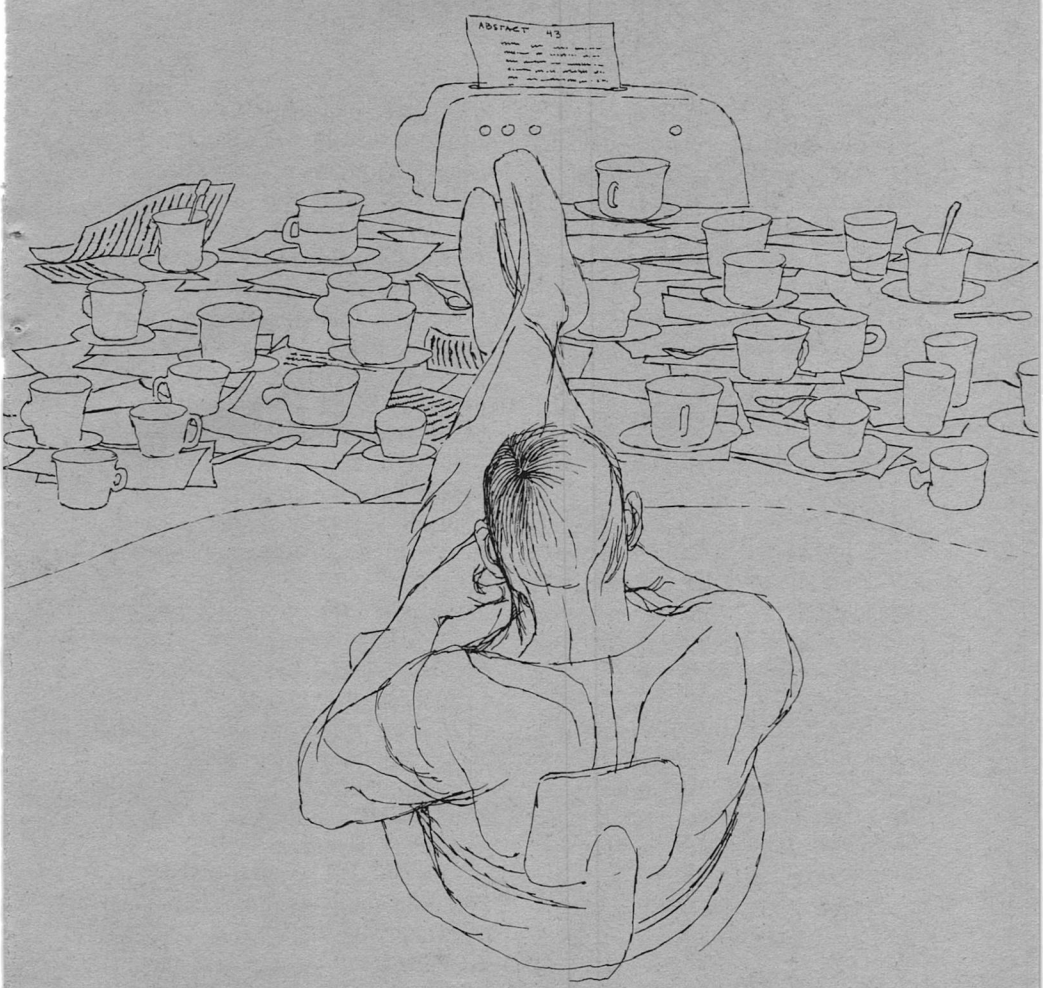
"All the reports you asked people to make, came," she said, indicating the stack of material in his hands. "Maybe I shouldn't have let the Unarko in? But he had that letter. And he's really been a great help to us since we came. He started the deep-breathing courses, and he gives a concert of Unarko music once a week here in town."

"He does, does he?" asked Hank.

"Oh, yes. To develop the proper spirit in us for spugeon culture. Oh, he's helped and helped," said Eva, looking discouraged "but things just keep getting worse and worse. That Joe!"

"Joe?"

"Can you imagine it?" Eva snap-



ped. "He's beginning actually to doubt you really are a properly trained GO. He says nobody who's devoted their life to learning how to be a GO could hit him that hard. Why, you didn't hit him! I told him that and he just looked mad and wouldn't discuss it. He's messaged Earth to demand identification of you. He says they can't deny us that, and if you aren't a real GO, everybody on the planet will be happy to help him string you up to a lamppost, after all we've suffered."

"Oh?" said Hank, grinning.

"Yes. I told him how silly it was for him to waste credit on a call like that. He won't even get an answer until eleven o'clock tonight. But," said Eva, with a sigh, "that's Joe for you . . . what's the matter?"

"Eleven . . . I mean," said Hank, fervently, "what time is it now?"

"Oh, almost time for lunch."

"Dear me!" squeaked Hank, in his best Soupstone accents.

"What is it?" Eva looked alarmed.

"I just remembered, I have to be back at Hemlin III by tomorrow morning. How," said Hank, wiping his brow, "could I have forgotten?"

"But our problem here?" cried Eva.

"Oh? Your problem—yes. Well," said Hank, "you know how it is . . . GO's are in great demand." He wiped his brow again. "We mustn't be selfish. Must we?"

Eva's eyes filled with tears.

"Other people," said Hank, uncomfortably, "have problems too . . ."

Eva began to weep gently.

"Well, naturally," said Hank, painfully, "I planned to get you out of the main problem before I left. Started back on the road to recovery. What I mean is . . . I couldn't do it all for you. Just plan it. You'll have to carry it out yourselves—"

"Oh, thank you!" cried Eva, radiantly, throwing her arms about him and kissing him. "You will get it solved before you leave?" She kissed him again. "You will? You will?"

"Leave it to me. Absolutely—where are you going?" said Hank, panting slightly.

"To tell Joe. That'll show him! Oh, is there anything you need?"

"Need? Of course, I need . . . uh," said Hank, checking himself, "some breakfast, bacon and eggs if you have them. Lots of black coffee. Have it sent in to the office here. I'll be very busy. Also, I need an abstracter. Have you got an abstracter?"

"One of those computer devices that makes abstracts of written material?" asked Eva. "I think so."

"Good," said Hank. "Get me one. Then stand by in the outer office. No visitors except the ones I send for. Got it?"

"Got it," said Eva, happily tripping out of the office.

Hank heard the door close behind her, and sighed. No rest for the weary. He looked down at the stack of paper in his hand and went and sat down at the office desk with it. He picked up the first report—which was from Joshua, complaining about the lack of adequate trucking, and tried to read it. But it was full of terms like *"ripening half-period"* and *"acidic soil ratios."* He was still struggling with it when Eva arrived with the breakfast and the abstracter.

He shooed her out, loaded the reports into the abstracter and sat down to the breakfast. He was just through with it and pouring his third cup of coffee when the abstracts began to appear. He took a look of the first one, a one-page abstract of Joshua's report. It made little or no more sense to him than the report had.

He pressed the key of the office intercom and spoke to Eva.

"Would you call your father and ask him to come in and see me?" Hank asked.

Fifteen minutes later Gerald Bahr arrived. Without a word, Hank passed him the abstract of Joshua's report. Gerald read it.

"Well," said Hank, when the little man was done, "what does that suggest to you?"

"Well . . ." Bahr was diffident. "Of course, I'm not a spugeon-farmer, myself, but it sounds to me . . . well, as if we need some sort of traffic control officer to get the trucks where they ought to be on time. Maybe someone who knows spugeons and traffic control, too."

"Very good!" said Hank, beaming approval, "You spotted the crux of the matter at once! I thought you would—but, of course, I had to test you."

"Of course," said Bahr, almost blushing with pleasure.

"Now," said Hank, beaming, of course I could do that myself, but as Eva's probably told you, I'm short of time. Is there anyone who could be named my assistant in that area?"

"Why . . . Jack Wollens!" said Bahr. "He's a farmer, but he was an expediter back on Earth."

"Fine, fine!" cried Hank. "Get him in here."

A short while later, Jack Wollens arrived. Hank handed him the abstract. He read it with a frown on his lean, sunburned face. He was a man in his mid-thirties with a serious expression about his eyes.

"It won't work," he said. "Where are all the trucks to come from—"

"The very flaw that struck me!" said Hank nodding approvingly. He turned to Bahr. "I have to congratulate you. You didn't underrate Jack, here, one iota." He turned back to Jack. "Now," he oozed, "suppose you had to answer your own question. Where would *you* say all the trucks were to come from?" He leaned forward expectantly over the desk. Bahr also leaned forward.

Pinned at the focus of two pairs of eyes, Jack Wollens ran a finger around his collar.

"Well—" he hesitated. "Maybe if we took trucks off the town services on alternate days . . ."

"You see!" said Hank, leaning back in his chair and nodding at Bahr. "Yes, indeed. Exactly!"

"Exactly!" echoed Bahr, enthusiastically, but with slightly puzzled eyes.

"Well," said Hank, turning back to Wollens, "you know who you'd have to work with, of course?"

"Herb Golighty? Herb and I always got along," said Wollens. "He knows I used to expedite back on Earth—"

"Naturally. Eva . . ." said Hank, keying the intercom. "You can call Herb now and ask him to come over. What? Golighty, of course. Herb Golighty. Sorry, I must have been mumbling. Get him right over here." He released the intercom key and turned to Wollens. "Yes, you and Herb will sit down as soon as he gets here and work up a plan. As of now, you'll be joint heads of the Department Of Transportation." He shook hands solemnly with Wollens. "Congratulations."

He turned back to Gerald Bahr, and shook hands with the little man.

"I can't tell you," he said, "how pleased I am to see how your people pick up the ball when I toss it to them." He withdrew another abstract from the pile. "Now, about this problem of bank credit . . ."

All afternoon and past the sunset hour, Crown Worldians filed in and out of Hank's office. Finally, as that world's single enormous moon had just risen to flood the landscape with moonlight hardly less bright than day, the torrent of traffic dwindled to a trickle and finally ceased.

"Well," said Hank, exhaustedly, sitting back in his chair at the desk and sipping on his twenty-third cup of coffee. He beamed over the rim of his cup at Eva and her father, who were the only ones left in the office with him. "I think you'll find that when the sun rises tomorrow your troubles will be over . . . er, one way or another. The assistants I've directed and put to work will be able to work out the situation here along the lines I indicated."

"It's been amazing, Mr. Soupstone," said Gerald Bahr, earnestly. He had been in and out of the office all day and had just now returned from his last assigned duty. "To see a GO actually at work, amazing! How you could hold it all in your head—how you knew at a glance or a word the right man to put in the right job—" Words failed the little man. He ended up shaking his head.

"Oh, yes!" said Eva, gazing radiantly at Hank. "And after you've only been here one day and we've been struggling with the way things were ever since we started spugeon raising. It's . . . it's superhuman, it really is!"

"Oh, well," said Hank, modestly.

"No, Mr. Soupstone," said Bahr. "Eva's right. Let me tell you something. As I watched you working today, it was just as if I felt a strong current, a source of strength flowing out from you and putting things to rights."

"Please," Hank stopped him with upraised palm and got to his feet. "My duty, only my duty—that's all I did. Well, much as I hate to leave your charming world—"

"But you can't leave just yet—" Gerald Bahr trotted to intercept him as Hank started around the desk on his way to the door, the outside, the spaceport and open space. "We wanted to express our appreciation—it was supposed to be a surprise. A banquet in your honor."

"Banquet?" Hank glanced at the clock. It was now pushing close to the ten P.M. mark. He tried feebly to break away from the little man. "I couldn't. No . . . no—"

"Yes, yes," said a voice from the doorway. Looking up, Hank saw Joe Blaine entering, carrying a bookviewer that looked remarkably familiar. Flanking Joe were two husky young colonists his own age, and behind them was the alien form of the Unarko. "We insist, don't we boys?"

The boys grinned and nodded.

"Joe, where have you been?" demanded Eva. "And what've you got to do with the banquet?"

"Wait and see," said Joe, grimly. Across the room, his eye met Hank's. "You aren't thinking of refusing?"

"On second thought, no," said Hank firmly. "No. Certainly not."

They went. Going down the building ramps, Hank found himself flanked by Joe's two friends, and when they got on their sliders, somehow he ended up still between the two, on a separate slider from Eva and her father.

They slid through the town toward a brightly lighted, auditorium-like building down the street.

"My!" said Hank, ingratiatingly, to one of the young men with him, nodding at the slider's controls. "No key? But I guess you all trust each other around here?"

"*We* do!" growled the young man. "There hasn't been anybody turn up dishonest on Crown World—so far. But there's always a first time, isn't there, Harry?" He looked at the other young man.

"Yeah," said Harry, fiddling with a piece of string in which he had tied a hangman's knot. "For everything." He put his finger in the loop and pulled it tight. It tightened very convincingly.

A moment later they stopped in front of the lighted building and Hank, surrounded by all the rest, was ushered up to the second floor and into what was apparently a private dining room with a long table set for some twenty people. Seventeen or so were already there. They all stood up and applauded as Hank and the others came in.

"Speech! Speech!" they cried.

Hank, being hustled down to the far end of the table and the empty place set there, farthest from the door, nodded and beamed at them.

When he reached the seat, there was another burst of applause.

"Er . . . my friends," Hank began, grinning horribly, as this finally died down. "Unaccustomed as I am to—"

"All right, we don't have to go through that!" broke in the voice of Joe Blaine from the end of the table. Everybody turned to look at him. He was holding up the book-viewer. "Before this banquet gets under way, I've got a few things myself to tell you about your guest of honor. Now, I found this book-viewer in one of his pockets last night when he passed out—"

"Joe!" rose the scandalized voice of Eva. "He didn't. And that's stealing—"

"Oh?" shouted Joe, still holding the viewer up. "Well, who steals his good name steals trash—or however that fool Shakespeare or whoever's line goes. I never trusted this Soupstone from the beginning, but you were all so sure he was the GO and an answer to all your troubles!"

He glared around at all of them at the tables.

"You all drive me nuts!" he roared. "You're like a bunch of children, needing somebody to look after you all the time. Well, nobody else would do anything about this Soupstone, so I did. I put in a call to verify his identity, but he heard about it"—he threw Eva a side-glare—"and planned to get off the planet before my answer came in. So I had to do what I could with what I found searching his pockets last night. One of the things was this bookviewer. Well, I read the book in it."

He waved it before their eyes. "You know what it is?" he shouted. "It's just a book of old French fables. You probably thought it was some treatise on theoretical math or something—just as you think now he's solved the situation here by getting you all to name each other as experts. Well, it's just a book of fables—and you know what the title of the first one is? It's called 'Soupstone'!"

The people at the table stared, murmured and looked up at Hank, who smiled and shrugged deprecatingly.

"And you want to know what the story of that fable is?" demanded Joe. "Let me tell you. It's about some gypsies, some medieval con men who're traveling through a part of France where there's a famine going on. Everybody's half starved and hiding what little food they have so they won't be robbed of it . . ." He paused for breath.

". . . Well," he went on, glaring down the length of the table at Hank, "these gypsies get a lot of the peasants together by promising they can make soup out of stones. Just stones. They get water from the peasants and boil it in a huge pot so they'll be enough for everybody. When it's hot they start tasting it and say it needs a little salt. So one of the peasants goes and gets some salt from his hidden food place. Then they want some celery to flavor the soup with, and another peasant goes and digs out his celery.

And then they say it needs a taste of turnip . . . and so on."

He ran his glare up one side of the table and down the other.

"You guessed it," he said. "Pretty soon that soup's got everything from beef to chicken in it, all supplied by the peasants. Now, how do you like our Mr. Soupstone?"

He paused, but those around the table only stared at him blankly.

"Don't you get it?" shouted Joe. "All this Soupstone, this fake GO, did, was get you to spell out your own problems and name each other as the best men to solve them!"

"But Joe!" cried Eva. "It *is* going to fix the situation—"

"It's not going to fix it!" bellowed Joe, turning on her. "If that'd solve it, we could've done it by ourselves. What good is just telling somebody there's a problem and he's in charge of fixing it? If there's no one to tell him *how* to fix it, he'll just stand there helpless! If this character was a real GO, he'd be sticking around to get you all working together and get the spugeon juice into the tanker ships and the tanker ships off planet."

He stopped and shook the viewer at them.

"But he *isn't* a real GO!" Joe snapped. "He can't run the team—and that's why he's dodging out. Because the minute he tried to run things you'd all see what a fake he is! That's why he's going. And that's why the fact he's going proves he's the fake I say he is."

Joe pounded the table, and the viewer in the fist he pounded with smashed to flinders. All eyes turned to look at Hank, who hung his head shamefacedly and began to slink around the table toward the door.

"Mr. Soupstone!" wailed Eva. "It isn't true! Come back! Say it isn't so!"

Hank only moved faster. A mutter of despair and dismay began to raise behind him. He paid no attention but accelerated his pace toward the door. It was right before him . . .

"Wait!" shouted the voice of Joe, suddenly. "Don't let him get away, after what he's done to us! Stop him—"

But Hank had already abandoned his policy of slinking. He had exchanged it for a policy of open flight. At top speed he bolted through the door, along the corridor and down the ramp toward the open street outside the building.

The sound of voices mounted into a roar of pursuit behind him. He reached the open air, spotted the keyless slider he had been brought here on, and flung himself on it.

He jerked the controls into full ahead position. His head almost snapped off, but a split second later, he was shooting down the street at foolhardy speed. Looking back, he saw forms emerging from the building and piling onto the sliders he had left behind. A second later they were after him.

His own speed he considered suicidal—but, he remembered, seeing them gaining on him behind, this particular world seemed to regard suicidal rates of travel as merely normal. He made it to the hatch of the *Andnowyoudont* just in time to whistle the outer air-lock door open, and pop through, closing it behind him as the solid missiles of hand-weapons began to crack against the—luckily missile-proof—outer hull.

Sweatily, gratefully, pantingly, he took off.

Ten hours later, safely back on Hemlin III, rested, bathed, and cleanly dressed—but somewhat unsure of manner, Hank once more approached the General Delivery window of the Space Terminal Mail building, where all his troubles had started. The same small brunette vision was behind the window, and her upper lip curled at the sight of him.

"Oh, it's you!" she said.

"I was called at my ship," said Hank, humbly. "They said there was a recorded message for me, here. Visio and audio from off-planet."

"Yes," she sniffed. "You can take it on the screen, here. Or would you like a copy tape so that you can view it privately"—she sniffed again—"elsewhere?"

"No, no," said Hank. "I don't mind." He smiled ingratiatingly at her. "I'd like to take it here."

"If you don't mind my seeing it also."

"Oh no," said Hank. "Certainly not—by all means. I'd like"—he tried the ingratiating smile again, which was met with the further stiffening of the pretty upper lip—"you to see it," he mumbled.

"Very well. Sign please." She pushed a form at Hank who signed it. Reaching out to one side of the window, inside, she swung a pivoted screen around so that it could be seen from Hank's position outside the window as well from her side of the counter. She pressed some control studs.

The screen unclouded to show the face of Joe Blaine. It scowled at Hank.

"Well," it growled, "I guess you know by this time your identity check came through. That's how I was able to find you here."

Hank stole a glance at the brunette, but she had produced a fingernail buffer and was apparently absorbed in buffing her nails.

". . . At any rate," the image of Joe Blaine growled on, "the new planetary governing commission on Crown World is paying for this call and I want to officially extend you our apologies. You were," said Joe, looking as if he were chewing on ground glass, "pretty clever!"

The brunette sniffed audibly. Hank sighed.

"It wasn't until we sat down this morning to see what we could salvage out of the situation," said Joe,

"that we realized you had it all fixed. Everybody there had the knowhow to do part of the necessary job. And, of course, there was me—"

Watching out of the corner of his eye, Hank saw the fingernail buffer slow and a brunette eyelash flicker.

". . . Pretty clever of you," snarled Joe, "making me suspicious of you. You knew once I'd been fool enough to chase you off the planet, I couldn't turn the rest down about taking over the hole in the organization I'd made by getting rid of you. So now I'm Commission Chairman, and the Unarko's packed his music and gone home, and we all"—it apparently took sheer violence to get the words out—"want to apologize and thank you . . ."

Someone apparently said something to him off screen. He looked away and then looked back again.

"Oh, yes," he said, with a false and shoddy imitation of a smile, "Eva says be sure and drop in to see us if you're ever in the neighborhood of Crown World again." Again he was prompted. ". . . And Eva also wants to say that as far as she's concerned you're not only a GO, but the best GO in the organization!"

Baring his teeth, Joe signed off. The screen went blank.

Nodding his head thoughtfully, Hank straightened up, turning until he found himself once more looking in the direction of the girl behind the window counter. He discovered a pair of brown eyes glaring at him.

"So!" said the girl. *"Now* you're a GO!"

"Well, now," said Hank, winningly, "in a manner of speaking—"

"I thought you told me you were a World Scout?"

"Well, yes—" said Hank. "If we could have lunch, I might explain—"

"If you think you can fool me—" the glare in the brown eyes faltered for a second and became uncertain, then hardened again. "If you're a GO, you ought to have known all about the fabliau when I told you about them! What's your special field if you're a GO?"

"Spugeons," said Hank.

"Sp . . . *spugeons?"*

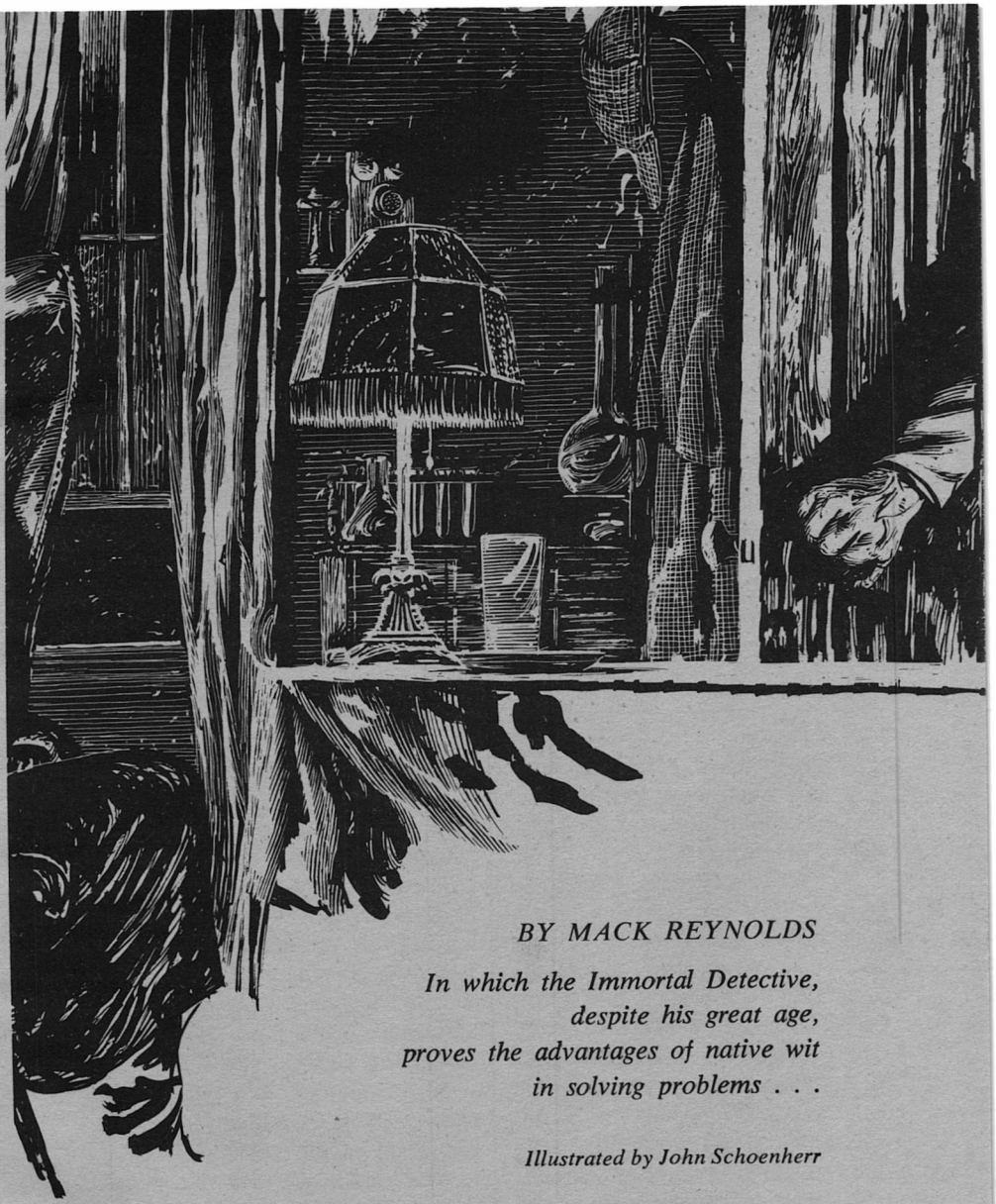
"An alien-originated fruit, very valuable," said Hank. "The great problem is getting the ripe fruit from the fields at just the right moment for processing—but," he said, checking himself, "no point in going into that and boring you—"

He sighed and ceased. The brown eyes were back glaring at him again. He sighed again, sadly and turned to leave. Three steps he took from the window.

"Mr. . . . Mr. Shallo . . ." wailed a small voice behind him, "Come back . . ."

A tender, forgiving smile crept on to Hank's lips. He turned and went back. ■

The Adventure



BY MACK REYNOLDS

In which the Immortal Detective, despite his great age, proves the advantages of native wit in solving problems . . .

Illustrated by John Schoenherr

of the Extraterrestrial

From the chess problem over which he had been nodding, my companion slowly raised his head. His aged-crooked fingers relinquished their hold on the knight—I suspected he had forgotten the square from which he had originally lifted it—and he leaned back.

His once lean, hawklike face worked before he cackled, "We are about to have company, Doctor."

London was lost in fog, a heavy autumnal curtain shutting the city away from our lodgings in Baker Street, and at first there was only the distant hum of diminished traffic that was the pulse of the city and the several small noises of water dripping; then I heard the low purr of a heavy vehicle, traveling a short distance, stopping, then coming forward again.

"Must be looking for this number," the aged detective prattled, "Who else at this hour of the night, eh?"

"Whom else," I said. Sometimes I suspect he thinks himself living in the days of nearly half a century ago, when clients were continually presenting themselves at odd hours. I have wondered if it wasn't a mistake to allow his relatives to coax me into returning to the rooms at 221b Baker Street to act as his companion in his final years. They had explained, at the time convincingly, that the octogenarian sleuth had never been happy on the bee farm in Sussex to which he had retired at the age of sixty in 1914.

"Eh," he was saying, listening intently. "He has left his car just a few doors away. He has gone to the door, eh? He has flashed his torch on the number. Heh, that is not the number, but it cannot be far away. Now, eh? He returns to his car but does not get in. He is too close to the address for that. He locks it, eh? And here he is, here he is."

Frankly, I had thought the old gaffer in one of his daydreams but his once keen eyes, now slightly rheumy, were fixed on the night bell. When it jangled, he chortled satisfaction, pushed himself to his feet, grasped his stick and made his way to the speaking tube where he invited our visitor to come up.

In a few moments there was a tap on the door of our lodgings and I crossed the room and opened it.

Across the threshold stepped a youngish, blackhaired man whose smooth shaven face was partly concealed by horn-rimmed glasses with dark panes. He was clothed in fashion and his well-tailored suit went far toward hiding his excessive weight. I had an impression of over-indulgence at the table—and possibly at the cabaret.

My companion, in a burst of lucidity which admittedly set me back, said happily, "Ah! A pleasure to see you again, Mr. Norwood. And how is Sir Alexander, your father?"

The newcomer stared at him. "For heaven's sake, man! It has

been thirty years since you set eyes on me in 1903. I was a child of five or six. I had expected to have to introduce myself, even to remind you of my father."

Chuckling to himself, my companion motioned him to a seat. "Not at all, not at all. The details of the case upon which I worked for your admirable father are still quite clear in my mind. Quite clear. Always thought of it as . . . just a minute . . . the Riddle of Closton Manor. Eh? Riddle of Closton Manor. As for recognizing your features, I assure you, young man, you resemble your father. Spittin' image, as the Americans say, eh? Isn't that what the Americans say, Doctor? Damn bounders."

"I wouldn't know," I said coolly. Actually, it was time for his bed and I disliked to see him aroused by company.

The retired detective lowered himself cautiously into his chair and reached for his pipe and tobacco, observing me slyly from the side of his eyes. He knew he wasn't supposed to smoke this late at night. He chortled with satisfaction, I suspected at thwarting me, and said, "I assume, young man, you are here on matters of personal interest rather than on an errand for Sir Alexander, eh?"

The newcomer lifted his eyes to me.

My friend chuckled in what I can only name a puerile fashion and said, "The doctor is my valued assistant." He introduced us, then lit his pipe, dropping the match on the floor, and said through the smoke, with a certain deprecation which irritated me, "His discretion is as great as my own. Eh? Great as my own."

We nodded politely to each other and the young man began his story. "Sir, my father has a great deal of respect for you."

"The feeling is reciprocated. Your father impressed me as a man of integrity and one with an unusual sense of duty and humanity, eh?" He chuckled again, and I suspected he was getting a childish pleasure at doing so well before me.

I felt, however, that Peter Norwood wasn't overly pleased with these words from my friend. He hesitated, before saying, "Then you will be sorry to hear that there is evidence that his mind is beginning to slip."

A shadow crossed the face of the former detective. "I am indeed. Your words distress me. But then, let me see, Sir Alexander must be in his late seventies." To hear him, one would never have suspected his full decade of seniority, the old hypocrite.

Norwood nodded. "Seventy-eight." He hesitated again. "You asked me whether my visit was personal or on behalf of my father. Actually, I am on his errand, but in fact I think it should be me you consider your client."

"Ah?" my aged companion mut-

tered. He made a steeple of his bent fingers as in days of old and I must admit there was a sparkle of intelligence behind watery eyes. Old his clay might be, but there was still in him the ancient bloodhound catching a distant whiff of a chase to come—were he able to rise to it.

Peter Norwood pushed out his plump lips in what was almost a pout. "I shall put it bluntly, sir. My father has only a few years to live and he is about to dispose frivolously of the greater part of his fortune."

"You are his heir?" I asked.

Norwood nodded. "His sole heir. If in these last years of his life my father wastes away the family fortune, it is I who will suffer."

My friend's mouth worked several times, unhappily. "Frivolous waste? Doesn't sound like your father, young man."

"My father is contemplating leaving the greater part of his estate to a group of charlatans and, if I may resort to idiom, crackpots. The World Defense Society, they call themselves." Peter Norwood could not control a sneer. He looked from one of us to the other. "You have heard of it, perhaps?"

We both shook our heads.

"Please elucidate," I said.

"This group and my father, who is a charter member, are of the opinion that there are aliens."

"Aliens?" I blurted. "But what could be more obvious? Of course there are aliens in London."

Peter Norwood turned his eyes to me. "Aliens from space," he said. "Extraterrestrials." He threw up his hands in disgust. "Men from Mars. Spaceships, I suppose. All that sort of rot."

Even my friend was surprised at this turn. "Eh? You say Sir Alexander supports this belief? Why?"

The young man's rounded face reflected his disgust. "He has a fantastic collection of *proof*. He has devoted the past two years to the accumulation of it. Flying saucers, unidentified objects in the sky. The case of Kasper Hauser. That sort of thing. Stuff and nonsense, of course."

The elderly detective leaned back and closed his eyes, and for a moment I thought he had gone to sleep, as can be his wont when he gets tired, or bored with the conversation. But he said, quite lucidly, "You say you are on an errand for your father?"

"Actually, it was I who planted the idea in his head," Peter Norwood admitted. "As I have said, Father has a considerable respect for your methods, sir. I will not deny that he and I have had several heated discussions on his phobia. In the midst of the last one, I suggested that since he thinks so highly of you, that he hire your services to investigate the presence of these aliens. As a result of that argument, I am here, ostensibly to employ you in his behalf to seek

out these . . . these little green men from Mars."

My companion opened his rheumy eyes. "But you said I should consider you to be my actual client."

Peter Norwood spread his hands. "I realize, sir, that you no longer practice, that you have long since retired. However, I implore you to take this assignment. To pretend you actually seek these so-called extraterrestrials, supposedly running wild about London, and then to report to my father that after a thorough search you can find no such aliens from space. Needless to say, I shall reward you amply."

I thought I understood his point. "You wish to have drawn up a supposed report of an investigation and present it to your father in hopes his neurosis will be cured?"

The young man shook his head emphatically. "That would not be sufficient, Doctor. My father is not an easily deceived man. The investigation would have to be made, and seriously so, and reported possibly in a step-by-step manner. Otherwise, the old fool will realize he is being duped."

The term *old fool* had slipped out, but in a manner I could sympathize with Peter Norwood.

My companion was in deep thought—or drowsing. I could not remember the adventure that he chose to think of as the Riddle of Closton Manor, but it was manifest that his regard for Sir Alexander must have been high indeed and that he was torn by this regard and by the young man's—what seemed to me—understandable position.

He wasn't asleep. He said slowly, "Aside from the fact that I have retired, this is not the sort of thing upon which I worked." He seemed petulant.

"Of course not," the other agreed, placatingly. "But then the fee—"

"It isn't a matter of fee."

Norwood blinked behind his lenses, but held his tongue.

The octogenarian puffed his pipe in irritation and squirmed in his chair. He muttered finally, "I assume your father wishes me to come to Closton Manor to discuss my employment on this project, eh?"

I snorted. The idea was ridiculous. The former sleuth seldom left our rooms except for a short stroll up and down the street for exercise.

"That was the purpose of my visit, supposedly. To bring you to him so that he might go over the matter with you. However, I can see that such a journey would—"

To my utter amazement, the aged detective slapped the arm of his chair and said, "Young man, expect me at your home tomorrow afternoon."

Before I could protest, Peter Norwood came to his feet. He was manifestly pleased. "You shall not regret this, sir. I'll see that your time—ah, financially, that is—is not wasted."

The aged face of the other worked, but he said nothing in reply to that. It was obvious that the young man assumed his interest was venial and that the former sleuth had lost caste by his decision.

I saw Norwood to the door in silence.

When I returned I stood over my aged friend and began, "Now look here— "

But he glowered up at me stubbornly and said in what I must describe as a blathering tone, "No reason I can't take a trip into the country for a breath of air, Doctor. I don't see why you think you're more fit than I, eh? Practically the same age."

I said, in an attempt to be biting, "Perhaps my fitness as compared to your own is based on the fact that as a young man stationed in the Near East I learned to make yogurt a daily item of diet, whilst at the same time you were wielding a hypodermic needle loaded with a certain crystalline alkaloid which shall remain nameless."

"Yogurt, heh, heh," he chortled in a manner which could but emphasize to me his caducity. He reached absently for his violin, probably having forgotten that two of the strings were broken.

In spite of my protests, at ten in the morning we embarked on the train for Durwood, the nearest village to the ancestral home, Closton Manor, of the Norwood family. I had looked up the title in Burke's Peerage and found the baronetcy an ancient and distinguished one originally granted on the field of battle by Richard the First in the Holy Land. More recently, bearers of the title had distinguished themselves in India and the Sudan.

We arrived in Durwood shortly after twelve and proceeded to Closton Manor by dog cart. A middle-aged, work bent servant had been awaiting the train. After introducing himself as Mullins and stating that Master Peter had sent him, he lapsed into silence which he maintained until we reached the manor.

We entered the extensive and rambling house by a side entrance where we were met by young Norwood himself and conducted by way of a narrow staircase to the rooms of Sir Alexander. I must admit that my retired detective friend was in uncommonly good condition having slept the whole way from London. His most lucid moments, I believe, were invariably immediately after he had awakened.

Sir Alexander was seated in a small study which was well stocked with books, pamphlets and aged manuscripts. In fact, the only description would be to say it was overstocked. Great piles of tomes leaned against walls or balanced precariously without support. But in spite of the fact that manifestly considerable study was done in the room, the light was dim, as a result

of rather heavily curtained windows.

Sir Alexander sat deep in an upholstered chair, wrapped in a steamer rug as though for warmth. His chin rested upon his chest and his sunken eyes looked at us from over his pince-nez. A thin mustache and beard, both gray, and a fringe of gray hair seen from under the skull cap he wore, ornamented his thin ascetic face, white within the darkness of his immediate environment.

"Ah, my friend," he said in a cultured, well-modulated voice, "We meet again." His eyes sparkled with a youth his body belied. He held out a hand to be shaken.

The retired sleuth, using his cane as though it was no more than an affectation, rose to the occasion. "A great pleasure to renew our acquaintanceship, Sir Alexander. May I present my friend?" He introduced us with a flare I hadn't witnessed in him for years.

It was my turn to shake the proffered hand and I found it warm and firm. First impressions deceive. Sir Alexander was considerably further from his grave than his son had led us to believe.

Peter Norwood said, "Would you prefer I leave, Father, while you discuss your business with our visitors?"

The baronet gestured with a slight motion. "If you don't mind, my boy. I shall see you at tea, if not before."

Young Norwood bowed to us, winking whilst his back was to his father, and excused himself.

When we were alone, Sir Alexander chuckled wryly. "Peter, I am afraid, is of the opinion that I am somewhat around the bend."

The former sleuth had lowered himself gingerly into a chair and was now fumbling in his jacket pocket for pipe and tobacco. "Suppose you tell us this from the beginning, eh?"

The other cocked his head to one side and eyed him, frowning, and probably noticing for the first time how considerably my companion had aged since last they had met. However, he said, finally, "I am afraid I am working under a handicap. I have no doubt that your minds have already been somewhat prejudiced."

I cleared my throat, if the truth be known, surprised at his approach. I had expected mental infirmity, but found no outward signs of it. Was it possible the man was pulling his son's leg?

My companion, who was bringing his match in contact with the shag he had fumbled into his pipe, rose to the occasion again, his voice being quite firm as he said, "I consider myself without prejudice, Sir Alexander, as you have had cause to know in the past."

A flush touched the other's face. "Forgive me, my dear friend. Hadn't it been for your toleration

three decades ago, I would be dead today." He looked away from us for the moment, as though seeking a starting point to his narrative.

"I suppose there is no beginning," he said finally. "This matter has been coming to my attention, piece by piece, fragment by fragment, throughout my adult life. Only recently have I given it the attention it deserves." He hesitated for a moment, then said to me, "Doctor, if you please, would you hand me that book on the top of the pile there to your left?"

I was able to reach the book and hand it to him without leaving my chair.

Sir Alexander said, "You gentlemen are both familiar with H. Spencer Jones, I assume?"

I said, "The Astronomer Royal, of course."

The other lifted the book. "You are acquainted with his work, 'Life on Other Worlds'?"

"Afraid not, eh," the retired detective said. I shook my head.

"Let me read you a passage or two." Our host thumbed quickly through the volume. "Here, for instance."

He began reading. *"With the universe constructed on so vast a scale, it would seem inherently improbable that our small earth can be the only home of life."* He skipped over some pages. "And here: ". . . *It seems reasonable to suppose that whenever in the universe the proper conditions arise, life must inevitably come into existence. This is the view that is generally accepted by biologists."*

He began to look for more passages.

"Never mind," my friend wheezed. "I accept what you offer, eh. That is, I accept the possibility. Possibility, not probability. Other life forms might be present somewhere in the universe." He chortled. "Let me say, Sir Alexander, that it is an extensive universe."

The old gaffer was outdoing himself, I had to admit. I had expected him to be drowsing by this time.

Our host nodded agreeably. "It is indeed. However, please pass me that magazine to your right there, Doctor."

He took up the magazine and thumbed through it. "Ah, here. This is an article by a young German chap, Willy Ley. A chap more than ordinarily interested in the prospects of man's conquest of space. Here we are: ". . . *We are justified in believing in life on Mars —hardy plant life. The color changes which we can see are explained most logically and most simply by assuming vegetation."* He skipped some lines, then went on. *"Of terrestrial plants, lichen might survive transplanting to Mars and one may imagine that some of the desert flora of Tibet could be adapted. At any event, conditions are such that life as we know it would find the going tough, but not impossible."*

Sir Alexander broke off and looked at us questioningly.

I said, "I submit, Sir Alexander, that the presence on Mars of lichens, and the possible presence on some far distant star of even intelligent life does not mean that alien life forms are scampering about the streets of London!"

The other was visibly becoming animated by the discussion. He leaned forward. "Ah, my dear Doctor, do you not see the point? When you grant the existence of life elsewhere than on Earth, you must admit the possible corollary."

I scowled at him and said, "Perhaps I have missed something."

Sir Alexander said quickly, "Don't you see? If there is life elsewhere in the universe, we must suppose one of three things. It is either less advanced than we, equally advanced, or it is more advanced than we."

My former detective friend chortled again. "That about covers everything, eh, Sir Alexander?"

"Of course. However, now please understand that already here on Earth man is beginning to reach for the stars. The Willy Ley I quoted from is an example of the thousands of young men who see tomorrow's exploration of the moon, and, in the comparatively near future, of the solar system. And they dream of eventual travel to the stars." He leaned forward again to stress his earnestness. "If we grant the possibility of intelligent life elsewhere, then we must grant the possibility that it is further along the path toward conquest of space. Our race, gentlemen, is a young one. Our fellow intelligent life forms might have several millions of years of growth behind them."

Neither of us had an answer to this. In my own case, there was just too much to assimilate. And I suspected my friend had lost the thread of thought.

Sir Alexander pointed a thin finger at us for emphasis. "If man is already laying plans for exploration beyond his own planet, why should not our neighbors in space have already taken such steps?"

I said, barely keeping irritation suppressed, "You have made a theoretical case for the possibility of alien life forms, and their desire to reach beyond their own worlds. But you have said nothing definite, thus far. Thus far, it is all in the realm of hypothesis. You have some concrete proof, Sir Alexander?"

Our host tossed the magazine to a cluttered desk and pursed his lips. He said, "I have never shaken the hand of an extraterrestrial, my friend."

My companion chorted, "Heh, jolly good, eh?" Evidently, he had been following the conversation after all.

But Sir Alexander raised his gray eyebrows at me. "Perhaps one day I shall, Doctor. Who knows?" He turned back to my companion. "For

literally centuries men have been sighting strange flying objects. Long before the Wright brothers unidentified flying objects, saucer shaped, cigar shaped, ball shaped, have been seen by reputable witnesses. Literally hundreds of such sightings have been recorded by Charles Fort, the American."

"American?" my friend muttered. "Blighter."

"But Sir Alexander," I protested "the man is commonly regarded as a fool, a fanatic, if not a charlatan."

The thin gray eyebrows went up again. "By whom, Doctor? I suggest that his critics so regard him. And those who have raised our still immature science to the pedestal and cry wrath against all who do not worship. But there are many tens of thousands of persons who regard Fort as a keen brain capable of revealing the shortcomings of many of our so-called scientific beliefs."

"I have never bothered to read him," I said, possibly a bit snappish in tone.

My retired detective friend's mouth worked unhappily. He said, "You have other, eh, evidence?"

The baronet motioned to his room, cluttered as it was with a thousand manuscripts, newspaper clippings, books and pamphlets. "For years I have been gathering data which in many respects duplicates that of Charles Fort. Accounts of strange sightings, both on land and sea. Accounts of strange people seen, strange animals, impossible phenomena."

I was becoming impatient. "And you believe them from some foreign planet?"

He frowned at me. "Don't misunderstand, Doctor. I assume no definite position as yet. But I do wish to know. Frankly, I am willing to place the greater part of my fortune at the disposal of the World Defense Society if it can be proven to me that there is danger of invasion of our planet by aliens. Thus far, the evidence presented has been insufficient to convince me." He turned to my friend. "That is why I wish your services. I have great confidence in you. If there are aliens in London, as my associates would have it, I wish to know. If they are dangerous to our way of life, I wish to be foremost in the defense."

He looked down at his aged body. "Unfortunately, my years prevent my services in other than a financial manner."

I was capable of nothing beyond staring at him. Was he asking the blind to lead the blind? My friend, who I suspected of tottering along the edge of dotardism, and I, myself, for that matter, were a good decade older than he. But here he was, suggesting he hire our services because his years prevented him from activity.

However, my companion, with a thump of his cane, came suddenly to life and pushed himself to his

feet with an aggressiveness that would have done him credit twenty years earlier. "I shall take the assignment, Sir Alexander." To me, his attitude indicated that his intention was to dash out upon the moors and begin immediate search for little green men.

It was too late now. I tried to rescue something from the debris, for the sake of young Norwood. "Under one condition, Sir Alexander."

The baronet's eyes pierced me. "And it is?"

"We shall guarantee to investigate to the best of our abilities. However, if it is found to our satisfaction there is no evidence of such aliens, you must pledge to drop the World Defense Society and your interests in alien life forms."

Sir Alexander sank back into his chair and remained silent for a long moment. Finally he said, his voice low, "Very well, Doctor. I trust you both."

There had been practically no conversation from my companion either from or to Closton Manor. He had drowsed both ways. Indeed, on the return, exhausted from his efforts, I suppose, he had snored most atrociously so that we had the compartment to ourselves. It was not until that evening when we were seated before the fire that he discussed the case—if the farce may be called a case—with me.

Over the steeple of his fingertips, which he affected when pretending still to retain his faculties, he peered at me quizzically. "What are your opinions on this matter, my good Doctor?" he asked. "I assume you have formed opinions, eh?"

If the truth must be known, I was somewhat surprised that he remembered the events of the morning. Anything out of the ordinary routine had a tendency to magnify his growing signs of senile dementia, in my professional observation.

I shrugged deprecation. "Sir Aexander seems an admirable enough man, but I am afraid he has—" I hesitated.

"Slipped around the bend? Very good, eh? His own term. Very good, eh? We used to say balmy. The blue Johnnies, the pink spiders. Slipped around the bend. Very good, heh, heh."

"Unfortunately," I said coolly, at his senile levity, "I feel sorry for young Norwood, his son. Frankly, I think his only recourse is to the courts, unless you are able to convince his father to forgo this fantastic hobby."

He eyed me slyly, with what I can only call that cunning you sometimes find in those failing with age. "Doctor, I am afraid young Norwood has anticipated you." He chuckled to himself, as though over some secret knowledge. "Thinks I'm pulling chestnuts out of the fire for him."

"What?" I said, cutting off his prattle. My face must have mir-

rored my lack of understanding—if, indeed, there was understanding to be found in his maunderings.

He shook a finger at me in puerile superiority. "If that whelp attempted to have his father committed merely on the grounds that he collected books and magazine articles on a rather fanciful subject, he would be rejected by the courts, eh? However, if he could prove that his father, ah, squandered money by hiring an overaged detective, then I submit that few courts of law would do other than turn the estate over to our young friend." He chortled sourly. "Imagine, hiring an old-timer such as myself to stalk Bug Eyed Monsters."

"Bug Eyed Monsters?" I said.

No chuckles, and I began to suspect his moment of lucidity had passed. But then he said, cryptogrammatically, "Your reading has been neglected, Doctor."

I got back to the point. "Then you believe that Peter Norwood is deliberately provoking his father along these lines in order to hasten the date of his inheritance?"

He worked his mouth, unhappily. "Manifestly, Sir Alexander is in excellent health, considering his age. He might live another five years . . ."

"At least," I muttered.

". . . Which makes it understandable that young Peter might be impatient for the title and the estate."

I became agitated at the old codger, in spite of myself. "Then, confound it, why did you accept this ridiculous case?"

My companion shrugged his bony shoulders in a petulant movement that to me accented his caducity. "Can't you see, eh? If I had refused, the ungrateful hound would have gone elsewhere. There are private investigators in London who would gladly co-operate with him. At least I have Sir Alexander's interests at heart."

I suspected he was having delusions again about his abilities to perform in the manner of yesteryear. However, I merely grunted and said, "I am not too sure but that the boy is right. Perhaps his father has slipped mentally to the point where he is incapable of handling his affairs. After all—aliens from space. I ask you!"

But my aged friend had closed his eyes in either sleep or thought and so I retreated to my book.

Approximately ten minutes later and without lifting his lids he wheezed, "Doctor, if there are aliens from space in this city, why should they have picked London, eh? Why London? Why not Moscow, Paris, Rome, New York, Tokyo, eh? Why not Tokyo?"

It had been years since I had thought him able to concentrate on one subject for so lengthy a time. I sighed, and marked my place with a finger. Usually he had drowsed

off by this time of the evening, sometimes muttering in his sleep about Moriarty, or some other foe of half a century before. I said, trying to keep impatience from my voice, "Perhaps they are in those cities, too."

He opened one eye, looked at me with a moist accusation. "No. Let us grant there are such aliens present, eh? And let us grant that they are in London."

"Very well," I humored him.

His wavering voice turned thoughtful. "Manifestly, they are keeping their presence here on Earth a secret for motives of their own. If this is their policy it then follows that they must limit their number, eh?"

"Why so?" I sighed, wishing to return to my tome.

"Because it would be considerably more difficult to keep the presence of an hundred aliens from the attention of we Earthlings than it would be one or two. If they're here, *if* they're here, Doctor, there are but a few."

I nodded, finding tolerant amusement in my aged friend's mental exercises. In fact, I was quite proud of him, especially at this time of the day. "That is plausible," I encouraged him.

"Why then," he muttered petulantly, "are they in London rather than elsewhere?"

I followed along with him, tolerantly. "But that is obvious. London is the largest city in the world. You might say, the capital of the world. If these extraterrestrials are investigating Earth and mankind, here would be the place to start."

He opened his eyes fully and snorted at me. "Your patriotism overshadows your ability to appreciate statistics, Doctor. In the first instance, London is no longer the largest city. Tokyo is, and even metropolitan New York exceeds our capital."

I began to sputter, I must admit, but he chortled what I can only describe as senile contempt of my opinions and went on. "And New York is the commercial center of the world and its largest port. Beyond that, it is Washington which has become the political center of the world. Damn Yankees."

I was miffed at his childish know-it-all attitude. "Very well, then, you answer the question. Why should they choose London, given the ridiculously fanciful idea that such creatures exist at all?"

"Only one reason, Doctor," he chortled, obviously inanely pleased with himself. "The British Museum."

"I admit I don't follow you," I said coldly.

His rheumy eyes were once more superior. "London may not be the population leader, eh? Nor the political head. But if I were one of Sir Alexander's BEMs . . ."

"BEMs?" I said.

He chortled again but went on. ". . . Making a study of this plan-

et, I would spend a good deal of time in the British Museum. It holds more data than any other museum or library. I submit that if there are aliens in London, investigating our customs and institutions, they are manifestly devoting considerable time to the British Museum."

He pushed himself to his feet, yawning sleepily. "And it is there, my dear Doctor, I shall begin my investigtion tomorrow."

I suspected that by the morrow he would have forgotten the whole matter, but I humored him. "Then you plan to go through with this, to make the motions of investigating the presence of space aliens?"

"Eh? Indeed I do, Doctor." His tone was petulant. "Pray recall, I gave my pledge to Sir Alexander." He began toddling off toward his room, depending on his cane.

I said after him in exasperation, "Just what is a BEM?"

He cackled an inner, secret amusement. "A Bug Eyed Monster."

To my astonishment, I saw little of the once great detective in the next few days. In fact, such was his energy that I was prone to wonder, as I have had occasion to before, whether he had made a contact, as the Americanism has it, and found some pusher who was supplying him with a need that I had thought long since cured. Manifestly, however, he was taking his task seriously. Indeed, on two different occasions I found him leaving our rooms in disguise, once as an elderly woman, once as a professorial looking scholar. On both occasions he winked at me, but vouchsafed no explanation and no description of his supposed progress. I could but worry that my old friend, in the burden of his years, was in a fantasy of belief that this ridiculous affair was as serious as the adventures of a quarter of a century ago, and more, when his faculties were at their height.

On the fifth day, shortly after a breakfast at which he had encouraged no conversation pertinent to the case of Sir Alexander Norwood, but had sat trying to impress me by pretending to be in deep thought, he asked to borrow my exposure meter. This was a device I had acquired but recently, after having received a rather complicated German camera as a birthday gift from a near relative. I was a bit nervous about his absentmindedly leaving the gadget somewhere, but couldn't find it in me to refuse the old duffer.

To my relief, he returned it that night and then, before maundering off to bed, requested that if in the morning I was able that I locate Alfred, the captain of his group of street gamins which he was amused to name his Baker Street Irregulars, and have him at our rooms by noon.

At that, I could but stare blankly at the door to his bedroom through which he had just passed.

Alfred, rest his soul, had fallen in His Majesty's service at Mons in 1915, and the balance of my friend's Irregulars had gone their way, largely to prison, if the truth be told.

My conscience now struck me. I had allowed my companion—my ward might be the better term—to become so overwrought in his belief that he was again working on a major case, that his mind had slipped over the edge of dotardism to the point where he was now living in a complete world of fantasy. Alfred indeed.

By morning I had resolved to make an ending of the whole affair, to bring matters to a head and to wind up insisting that my companion return to the sedentary existence that we had become resigned to before the appearance of Peter Norwood.

To accomplish this, I took me to the streets, in the late morning and accosted the first ten- or eleven-year-old I spied. He was a ragged, wise looking chap, his voice considerably more raucous even than that of his ragamuffin companions. If the truth be known, and if my memory served me correctly, he somewhat resembled the Alfred of long ago, who had, in his time, played on these very same streets.

I said, "See here, young fellow, would you like to make half a crown?"

He looked at me for a long, calculating minute. "Doing *wot?*" he said, his tone implying, *I've 'eard about your type gent, I 'ave.*

I refrained from giving him the back of my hand and explained what I had in mind, and after jacking up the price to three shillings he agreed.

So it was that when the retired detective appeared at noon, swinging his cane, rather than hobbling upon it, he bid me a cheery afternoon and clapped the boy on the back. He looked every bit as though he had shed twenty years in the excitement of his endeavors, and came immediately to the point.

"Alfred," he said, "do you think you might find three or four other boys for an assignment this afternoon?"

The lad had been standing, his arms akimbo, his bright eyes flashing, before the other. Now he touched his cap and said, "I thinks so, sir. Right away, sir?"

"Right away, Alfred. Scamper now."

Manifestly, I was taken aback. "Just a minute!" I rapped, thinking to spring my trap. I turned accusingly to the companion of my declining years. "See here, just who do you think this young chap is?"

The former detective blinked his rheumy eyes, as though it were I who had slipped over the precipice of puerility. "Why, it's Alfred. Surely, my good Doctor, you must remember his grandfather who was so often of service to us in the old days. We have managed to become

friends during my morning strolls along the street."

I closed my eyes and counted slowly. When I reopened them, the boy was gone in a rattle of shoes upon the stairs.

"And how," I asked, perhaps testily, "goes the investigation of the men from Mars?"

He had sunk wearily into his chair. Some of his elan of but a moment ago dropped away and I could see him working his slack mouth. However, his thin eyebrows raised and he asked, "Why do you think them from Mars, Doctor, eh?"

His matter-of-fact inquiry unsettled me. "Really," I said. "I was but jesting, you know."

"Oh." He mumbled something, in his old manner, and closed his eyes and I assumed his morning exertions had exhausted him to the point of putting him a-napping.

So, though burning with curiosity, I sat down in my own chair and took up a medical digest I had been perusing.

However, he was not asleep. Without opening his eyes he said in what I can only call the blathering tone I had become used to in the past few years, "Doctor, do you realize how blasted difficult an alien, far in advance of our own science, could make it to detect him, eh? How blasted difficult?"

"I rather fancy he could," I agreed, encouraging him in a way simply to find out what in the world he had been up to, but at the same time still a bit peeved over the Alfred misunderstanding.

"One chink in the armor," he prattled. "One chink in the armor, eh?"

"A chink?" I said.

He opened his eyes, as though accusingly. "Gadgetry, Doctor. Couldn't keep him using his gadgetry." He closed his eyes and chuckled.

I was exasperated, I must admit. "I am not sure I follow you," I said coldly.

This time he didn't bother to raise his lids. "Simple deduction, Doctor. Suppose he is making records of some of the books and manuscripts, eh? In the library section of the British Museum. And to use a camera of our culture, he must carry heavy volumes a distance in order to get sufficient light. He would be tempted, sorely tempted, to use a camera or some device, of his own culture. One that would photograph in an impossibly poor light."

"Good heavens," I ejaculated. "You borrowed my light meter this morning!"

He chortled his senile pose of superiority for a moment, then nodded with an irritating air of accomplishment. "Doctor, there is a . . . ah . . . person daily appearing at the library. According to your light meter, and according to the most advanced works I could find on photography, there is no lens or

film of such speed now manufactured that could take such photos in the light he was using."

Before I could assimilate his words, there was a rush and a clatter on the stairs coupled with our good landlady's indignantly raised voice; the door was thrown open without ceremony and young Alfred burst into the room followed pell-mell by a trio of grinning urchins.

"Here we are, sir," cried Alfred, closing the door and marching up to my friend, followed by his companions.

"So I see," the aged detective wheezed. "Mystery to me how you can manage to act so quickly." He fumbled forth four florins from his pocket. "These shall be yours for what should be a simple task for such active young men." He cackled as though he had made a humorous sally. "I want you to follow a rather elusive chap from the British Museum to his lodgings."

The old gaffer's rheumy eyes almost gleamed. He chortled, "I am sure you will. And where the most cautious persons might suspect an adult who is going to keep a suspicious eye on a shouting, playing lad?" He chuckled to himself again so that I suspected he had lost his train of thought, but then he said, "And now, lads, let us be off to assume a strategic point near the museum entrance."

"I don't suppose," I said, possibly a trifle wistfully, "that you need further assistance?" Could it be that, caught up in the excitement, I was reacting like an old fire horse?

However, he said, "Not today, Doctor, not today. Afraid your arthritic joints are not quite up to the pace today." His voice trailed off into utterly indistinct drivel, even as he left the door, and the last I made out was something pertaining to yogurt.

I stared after him in some indignation, but they were gone, the boys' feet clattering down the stairs.

I heard no more of the case for three days, and then, suddenly it came to a head, though not exactly to a conclusion. If there can be said to be a conclusion at all.

We were seated early in the evening in our usual places, I with book in hand, my ex-detective friend tinkering with his .455 Webley, a weapon with which he was once remarkably accurate but which of recent years has caused me to wince each time he handles it. One of these days, I am going to throw away his supply of shells.

"Ah," he muttered finally, "our friend Peter Norwood is here for his report." I must admit that his newfangled hearing device is effective, with it his ears are considerably better than my own.

Even as he spoke, I could hear a knock at the door and faintily our landlady's voice. In moments there was another knock, this time at our own door.

I opened and welcomed the young man in, for indeed it was he. Peter Norwood's face was slightly flushed, undoubtedly from a surfeit of good food and rare vintages, for it was shortly after the regular supper hour.

He looked at us, the wine preventing him from disguising a somewhat belligerent attitude. "How long is this to take?" he demanded. "How long does it take to cook up a reasonable story for the old boy?"

The former detective did not arise from his chair. He said, mildly I thought, "I sent my report to your father this morning, Mr. Norwood." Which was lucid enough, but then he chuckled under his breath in what I can only describe as inane fashion.

"Ah?" Norwood blinked at him, momentarily taken aback. "Well," he said, reaching for a pocket, "I suppose then there is nothing more than to pay you off." There was a contemptuous undertone in his words.

"Unnecessary. No fee. I am retired, young fellow. No longer dependent upon my profession." He waggled a bent finger at the other. "But if there had been, I should have submitted my bill to Sir Alexander. It was his commission, eh?"

Peter Norwood scowled his incomprehension. Evidently, he began to smell a rat for his eyes narrowed and he growled, "What did you report, sir? Though I warn you, it will make no difference."

My aged friend fumbled through his pockets petulantly, finally coming up with a badly wrinkled carbon copy of a letter which he had obviously laboriously pounded out upon my typewriter. He handed it to me, obviously to be read aloud.

This was the first I knew of it, however, I read. *"My dear Sir Alexander: This will convey to you my belief that your interest is well founded, and that your hobby, that of investigating the possibility of the existence of life forms on other planets and/or in other star systems, is an intelligent one. I have uncovered sufficient data to indicate further investigation by yourself and the group with which you are affiliated would not be amiss."*

He had signed it very normally. Frankly, I had no idea he was capable of composing so coherent a letter, no matter how puerile the content.

Peter Norwood was glaring at him. He stuttered, "I . . . I suppose you think you have thwarted me by this . . . this piece of lying nonsense?"

My friend chuckled his affirmation, obviously as pleased as punch with himself.

"You realize, you old fool," the young man snapped, "that no court in the land would fail to commit my . . ."

But the other was wagging an age-bent finger at him, his watery eyes still capable of a dim spark of

fire. "It will never come to court, young fellow. Eh? This case has taken a full week of my time. I didn't spend it all in chasing elusive extraterrestrials. I warn you, young man. I warn you that if Sir Alexander is brought before the courts in an attempt on your part to secure management of his affairs, I shall reveal your own secret."

And with that he leered in a most senile fashion.

He could not have been more effective had he struck the other across the face. Peter Norwood staggered back, obviously deeply distressed. His flushed features went pale.

The former detective chortled. "Yes, yes. My time was not wasted. I have no intention of making a report on the subject to your father, eh. Nor to, shall we say, others who might be concerned. I bid you to take heed"—he leered again, the obscene leer of an old man beyond vice himself—"and now, to take your leave." His voice dribbled off into a chuckle again, as though in thinking of young Norwood's secret.

Without another word the young man staggered from our rooms.

"Confound it," I blurted. "This whole thing escapes me. I am in the dark. What sort of secret of that bounder's were you able to ferret out?"

He wheezed his inane laugh, until I began to suspect all over again complete dotardism, but finally he chortled, "Come now, my dear Doctor. We have here a young whelp obviously the victim of his sensual vices, eh? In spite of what must be a considerable allowance in view of his big cars and his fine clothing." And then with a return to the terminology of yesteryear, "You know my methods. Utilize them." He began his idiotic chuckling again.

"You mean . . ."

"I mean I haven't the slightest idea what the young hound's secret might be. Gambling, a young woman, or whatever. But I would wager that there *is* such a secret, or more than one."

I chuckled myself, seeing the humor of the situation. "But my dear fellow, that report you submitted to Sir Alexander. Do you think it well to encourage him in his delusions?"

He had found his pipe and now loaded it, probably, in his childish cunning, thinking that in the discussion I would fail to notice his smoking at this late hour. "I submit, Doctor," he prattled, "in the first instance it is a harmless hobby that will fill the hours for an old man whose mind is still keen."

"And in the second instance?" I prompted.

"Ah. In the second instance, the report was in good faith." He chuckled again, vaguely, and for a moment I thought he had lost the thread, but it came back to him.

"I assume you have deduced from my activities that I located an individual at the museum who was making an extensive collection of photographs, eh? Photos of periodicals, books, pamphlets."

I nodded encouragingly.

"Well," he babbled, "with the assistance of my Baker Street Irregulars I was able to trace him to his rooms." He watched me slyly from the side of his eyes. "Eventually, I was even able to search them. Eh?"

I leaned forward, my interest manifest. "And what did you find?"

"Nothing."

"Nothing? *You,* the outstanding sleuth of our era, found nothing?"

He had lit his pipe and now waggled the extinguished match at me. "Negative assistance, Doctor. Negative evidence, but not without value. The man's—I use the term with reservations, eh?—the *man's* apartment was devoid of any records, personal effects, or anything whatsoever which might give a clue to his identity."

"A spy!" I blurted.

He wheezed his disgust at my opinion. "A spy for whom, eh? Anyway it was too late. Our bird had flown."

"A spy for some foreign power . . ."

He chuckled. "Very foreign indeed."

". . . Some power such as Russia, or Germany. Possibly France or the United States. Each nation has its quota of agents."

His rheumy eyes held an expression of contempt. "I submit, Doctor, that none of the nations you name need sneak into the British Museum for such information as is there. It is open to the public, which includes the members of the diplomatic corps of these countries."

Had the matter ended here and without further development, I must be truthful with my readers, it is unlikely that I should have recorded this last of the famed sleuth's adventures. For I had come increasingly of the opinion that he had slipped irrevocably over the edge of the precipiece of senility, and it was painful enough to report these activities of a once great mind. However, the postscript of the whole matter is such that I am left admittedly unsatisfied and pass on to other followers of the career of the world's most immortal detective the bare facts, without final conclusion.

For it was but the night following the above mentioned conversation that a knock came upon the door. There had been no preliminary ringing of the bell, no sounds of our landlady answering the door below. Nothing save the knock.

My friend scowled, fiddled with his hearing device petulantly, his once hawklike face in puzzlement such as he seldom admitted to. He muttered something under his breath, even as I answered the summons.

The man at our threshold was possibly thirty-five years of age, impeccably dressed, and bore himself with an air of confidence all but condescending. Perhaps still miffed at my unsatisfactory conversation with the aged sleuth the night before, I said snappishly, "Yes, my good man?"

The other said, "My business, sir, is with . . ."

"Heh!" the aged detective cackled. "Señor Mercado-Mendez. Or should I say, Herr Doktor Bechstein? Or, still again, Mr. James Phillimore? So, we meet again, eh? How long has it been since our confrontation on the cutter *Alicia?*"

To say I was startled, would be understatement. I have recorded, long since, the mysterious episode of the *Alicia* which sailed one spring morning into a small patch of mist from where she never again emerged, nor was anything further heard of herself and the crew. One of the few adventures of my detective friend, while still in his prime, which he had failed to solve. Nor could I have failed to place the name Phillimore, who, long years since had stepped back into his own house to get his umbrella and was never more seen in this world. Another adventure never solved.

But, as I have said, our newcomer was at most in his mid-thirties and the two cases I mention took place during the Boer War, when the other could have been but a child.

However, he bowed and, ignoring me, addressed my companion, though never stepping within the limits of our rooms.

"Congratulations, sir. I did not expect recognition or would have taken precautions."

The aged detective grunted. "Precious good they would have done you, eh? I never close a case, Señor. Even that of Isadore Persano, still rankles me."

And once again it came back to me. The third adventure never solved by the greatest brain ever to concentrate upon the science of criminal detection. Isadore Persano, the well-known journalist and duelist, who was found stark raving mad with a matchbox in front of him which contained a remarkable worm said to be unknown to science.

And now I could but note that Señor Mercado-Mendez, if that was his name, stood in the shadows for good cause. His visage was such as to be that of a poorly embalmed corpse, waxlike in complexion so that I wondered if it could be a mask. Only the unnatural sharpness of his eyes indicated his face lived.

He bowed again. "In the past, sir, it has not been necessary to contact you directly, though on the several occasions you mention you came dangerously near stumbling upon information not meant for you —nor anyone else."

There came a tension in the air, and the mouth of my old friend

worked. "I deduce Señor Mercado-Mendez, that you are not of this world."

I would have expected that bit of drivel to have been enough to send anyone off, without further discussion, but our newcomer merely stared for long moments, as though considering the old duffer's words.

Finally, still ignoring me, he said, "I have come to warn you, sir, that the Galactic Council cannot permit you to continue interfering with legitimate student research conducted with all care not to upset the internal affairs of your, shall we say, somewhat unique culture."

Obviously, the man was as mentally incompetent as was my friend, who could at least claim the infirmity of age. I began to take issue. However, he turned but briefly and his eyes gleamed warning as a cobra's eyes gleam warning, and I grew still again.

The once great detective shifted in his chair, petulantly. "So far as I am concerned, the case was closed. However, I cannot speak for Sir Alexander and the World Defense Society."

There was a glint of amusement in the other's startling eyes. "We will not worry about Sir Alexander's group, sir. We have had our Sir Alexanders before." There returned the element of condescension to the stranger's voice. "Nor need you worry about preserving the integrity of your planet. Your desire in that direction is as nothing compared to that of the Galactic Council's Bureau of Archaeology and Ethnology, Department of Research in Living Primitive Cultures."

There was a long moment of silence and when my friend spoke again there was a slow care in his voice which brought me to memories of long years before, when the famed sleuth was feeling his way to the solution of a problem beyond the ken of ordinary minds.

"I deduce further," he said ,"that your own position is similar to that of a police official . . . perhaps guardian were the better term."

The other made a very human shrug, twisted his mouth wryly and bowed. His eyes came again to me and I had the impression of being quickly weighed and rejected as an element to be considered in this nonsensical verbal duel. He said agreeably, "The Council is desirous of protecting such planets as your own, admittedly there are elements who would exploit your culture, in its infancy. I am the Council's servant."

Perhaps it was that the aged detective was growing weary of the condescension in the other's tone. He took on a snappish quality. "I begin to suspect, Señor Mercado-Mendez, the solution to many of the great unsolved crimes of the world. The disappearance, for example, of the Great Mogul diamond, eh? The

spiriting away of the Aztec treasure following the *noche triste* of Hernando Cortés, The theft of the sarcophagus of Alexander the Macedonian, eh? The unbelievable tomb robberies of the Pharaohs. The . . ."

Had the stranger's face been capable of a flush, it was manifest that one would have appeared at this point. He held up a hand to quell the cataloguing. "Admittedly, the best of guardians can sometimes fail."

The great detective's face sharpened in such wise that I knew, from long past experience, that he had arrived at a conclusion satisfactory to him. I snorted inwardly. He was having his delusions again.

He said, his voice resisting wavering, "I submit the following. In this world today, the nations are deep in international intrigue, war threatens, and all prepare. Major nations send agents to every continent. Is it not manifest, Señor, that a British undercover operative masquerading as an Arab would have immense difficulty detecting a first-rate German undercover agent masquerading as an Arab in the same town. But an Arab native would be much better equipped to detect the slight flaws in the German's disguise, eh?"

All of which was obviously beside what little point there had seemed to be in the conversation before, so far as I could see, and I had about decided to suggest to the newcomer that he was trying the strength of my companion with all this claptrap, and that it might be well for him to be on his way.

However, Señor Mercado-Mendez, if that was truly his name, seemed to find meaning where I had not. His tone had now lost the amused tolerance of his earlier words. He said, "You suggest . . ."

The aged detective nodded as he relit his pipe. "Manifestly."

The other was quietly thoughtful. "In what capacity would you expect to act?"

"Heh," my companion snorted. "As you should well know, my following has been that of a consulting detective, Señor. And my fees, I might add, not minimal."

From whence the old codger was drawing his resources I shall never know, though I will admit that by this time my own were giving out to the point that my bed's attractions were wooing me. I said, "Hasn't there been quite enough of this drivel? Neither of you makes sense to me. If I gather anything at all, it is that my octogenarian, ah, patient is offering himself as an employee. I submit . . ." But they were ignoring me.

There was condescension again in the younger one's tone. "Fifty years ago, sir, perhaps your offer would have had its elements."

The once great sleuth lifted an age-bent hand and waggled it negatively. "Señor, I need hardly point out the manifest answer to that."

He cackled his inane amusement. "Your own appearance after all these years is ample indication that your people have, shall we say, discovered what Friar Roger Bacon once named the *Elixir Vitae.*"

There was a lengthy silence. Finally, "I see. And you are correct; your fees, sir, are far from minimal. However, it is not the practice of the Galactic Council to interfere with the natural progress of primitive planets by introduction of medical techniques beyond . . ."

The bent hand was waggling negatively again.

I suppressed a yawn. Was this to go on forever? What in the world were they getting at?

My friend said, "Obviously, Señor Mercado-Mendez, all rules must have their exceptions. If your council's work is to be successful, you need a"—his chuckle had the inane quality to which I object—"shall we say, aborigine, agent on your staff. Come, Señor, you know my abilities, my methods."

The strange visitor seemed to have reached some decision. "It is not for me to decide. Can you come to consult my immediate superiors?"

To my admitted amazement, the retired sleuth banged the arm of his chair and wavered to his feet. "Immediately, Señor," he cackled.

"Now see here," I protested. "This has gone much too far. I cannot permit my . . . my *charge* to be taken out at this hour, after a full week overladen with activity. I say . . ."

"Hush up, Doctor," the old codger muttered, on his way for muffler and coat. "Charge indeed."

Weary as I was, I resolved on firmness. "I warn you, I shall no longer put up with all this balderdash. If you insist upon wandering out into the night, at your age, I submit that I have no intention of assisting you. I shall remain right here."

He grunted puerile amusement, managed to get into his things without assistance, and turned to our strange visitor. "Let us be on our way, Señor."

Admittedly, I stared after them in my amazement for long moments after they were gone. Perhaps it was my own weariness, but I must confess being unable to detect the sound of their passage down the stairs and out the front door. But then, as I have reported, my hearing is not what it once was.

In the morning he had not returned, nor the next.

I could not but recall long decades before when he had vanished from my ken for some years. But the difference is manifest. An octogenarian does not roam about the streets of London with no companion other than a driveling madman who prates about being the representative of a galactic council, or whatever he called it.

Debating whether to call the

police, and hesitating in view of my old friend's reputation—long years ago he was dubbed the immortal detective—there came back to me some of his words that I had not understood at the time. Perhaps there was a slight clue there.

I went to the encyclopedia and looked up Friar Roger Bacon and the term *Elixir Vitae*.

Friar Roger Bacon, 13th Century alchemist and metaphysician. One of the most prominent of those who sought the elixir of life which would grant immortality, and the philosopher's stone to transmute base metals into gold.

I grunted and returned the volume to its place. Nothing there but more nonsense of the type they had prattled back and forth to each other two nights earlier.

But still I refrain from phoning the authorities.

Back to me, down through the years, come the words I have heard a score of times over. *When you have eliminated the impossible, whatever remains, however, improbable, must be the truth.*

And back to me also continue to come the very last words my friend chortled at me as he left our rooms with the mysterious Señor Mercado-Mendez.

"Yogurt, heh, heh." ■

IN TIMES TO COME

Next month's cover story is by R. C. FitzPatrick. It's called "Half A Loaf." The only previous yarn FitzPatrick has sold us was a short piece called "The Circuit Riders"—which was quite memorable. This item will cause you to do some very considerable rethinking of just what you mean by ethics. Basically it takes off from the old rule of medical ethics that a doctor who has developed a new treatment that cures the hitherto incurable is ethically bound to publish his technique. Even if it means that he, his staff, and his patients would be lynched . . . ???

THE EDITOR

Though a Sparrow Fall

When you finish this short story—consider a highway direction sign!

by Scott Nichols

Gerten, the biochemist, chose that precise moment when the buzzing conversation was swallowed in one of the inexplicable silences that periodically sweep a crowded room to say, "No, I have not proven the existence of the human soul. It's much more horrible than that."

"Oh, for heaven's sake," DuBois of the English Department said in a stage whisper, "the scientists are out changing the universe again."

I shifted my weight uncomfortably and looked at Simmons of the Botany Department with a pained expression. This was my first faculty cocktail party, and he had been shepherding me about the room, adding an alcoholically clever remark to each introduction.

"I thought that was the function of all biochemists, isolating the substance of the human soul," Simmons kept winking knowingly at me.

Gerten stared at his drink morosely. "I think I shall dedicate my life to remaining permanently and completely drunk," he said.

"Oh, come now, Dr. Gerten," Mrs. Kraskov said from her well-occupied position on the couch. "You scientists are always acting as if you had discovered new and deadly bits of knowledge."

"The legacy of the Manhattan Project," DuBois said. "You, too, can blow up the world on Saturday."

"Biochemists do not learn how to blow up the world," Gerten said slowly. "They just find ways of demonstrating that the destruction of the world is of no consequence."

Mrs. Gerten came from the kitchen at that moment nibbling on a limp anchovy which was draped across a cracker. "Frank," she said looking pointedly at her husband.

"No, let him alone," Simmons insisted. "I've been wondering why he's been so sour lately."

"Not sour," said Gerten. "Resigned is, I think, the word."

"Ah," DuBois said *sotto voce*, "he will tell us. I just know he will."

"Yes," Simmons said, moving in

for the kill, "nothing exciting ever happens in the Botany Department these days. Let's hear what you fellows have been up to."

The ten people in the room leaned forward expectantly like so many aficionados waiting for the matador to be gored.

"There's not much to it," Gerten said tiredly. "Most of you know that I have been working on nucleic acids—that is, the substances in the chromosomes that transmit hereditary characteristics."

"I'm going into the kitchen," Mrs. Kraskov announced pulling her quivering bulk from the couch.

"Anyway," Gerten said, "without getting into anything too complex, you should know that these nucleic acids are made up of a number of basic units called nucleotides linked in chains."

"Like beads on a string," Simmons volunteered.

"Well, that's a rough analogy," said Gerten. "However, their sequence is pretty important. Change the sequence of type of nucleotides and you get a different gene." He placed his drink on the table and ran two fingers across his pursed lips. "Somebody remarked once," he continued, "that you could treat a genetic pattern—the genes and the DNA nucleotide patterns that determine the makeup of an animal—as a message being transmitted through time."

"Communication theory," Simmons said. "Some bright fellow's always finding a new application these days."

"Just like a message being transmitted through time," Gerten interrupted. "That's a tricky statement, if you stop to think about it."

"But, of course, you don't mean this literally," DuBois said.

"Not at first, of course," Gerten said. "Still, you can get some crazy ideas now and then. I suppose all of us feel like painting mustaches on billboards occasionally or turning over ashcans, figuratively speaking, in our profession. After all, research *is* a sort of complicated play activity."

"Hah!" DuBois exclaimed looking around the room in triumph. "At last the scientists are admitting to it!"

"What has that to do . . ." Simmons began.

"With the study of nucleic acids?" Gerten asked. "Well, you know cryptography is a hobby of mine. I got interested in it when I first took up statistics. Anway, I got the crazy idea one day of running a content analysis on the nucleic acids in the human genes with which I was working."

"Oh, come now," DuBois exclaimed.

"Oh, I suppose you could say the idea came from sheer funk. My own research wasn't going well. Anyway, you can often find the damnedest coincidences in a purely random arrangement."

"Fifty million monkeys and the books in the British Museum," DuBois said condescendingly. "The fruition of a century of science. It comes to this."

"Perhaps," Gerten said, refusing the bait. "Well, I had the computer for eight hours one day, and about three I saw I'd have a free hour."

"The Accounting Department will love you for that," Simmons said. "Do you know what it costs . . ."

"Oh, be quiet, Norman," DuBois said in mock sympathy.

"I know," Gerten said. "It was silly—or so it seemed on the surface. Still, I began to wonder about the value of intuition in research."

"You mean the machine read some interpretation into the arrangement of the nucleotides in our genes?" I asked hoping to get the thing finished.

"You've got to understand," Gerten said, "the ANAVIC is truly synthetic. It can even deduce a language, I'm told, given a number of words from that language."

"Oh, come now," Mrs. Kraskov said as she came back into the room from the kitchen. "You can't be telling us that God, or the First Principle, or What-Have-You has left us a message in our own genes."

"No," Gerten said. "No, not *us*."

"Well, who?" Simmons asked.

"I don't know," said Gerten.

"Well, for heaven's sake," DuBois demanded, "what was your mysterious message?"

"Something completely trivial."

"Like, 'Please leave two quarts of milk'?" Simmons asked.

"More like, 'Meet me at Twelfth and Spruce at three'," Gerten said.

Mrs. Kraskov gave a little giggle. "Surely something more important."

"I'm afraid not," Gerten said.

"Well," said DuBois, "you certainly take a dim view of the role of the human race in the universe."

"Not I," Gerten pointed out.

"Nevertheless," I said, feeling that this would put the cap on the story and change the subject, "you *have* found a purpose for humankind."

"Why, yes!" Mrs. Kraskov exclaimed. "How marvelous! Just like one of the communication satellites with a message on its tape, journeying through space and time until the right impulse arrives and it sends back its ancient message."

"It may not be a glamorous purpose," Simmons said catching the spirit, "but just think; science has at last given a meaning to man's history."

"It *is* nice to know," DuBois said grudgingly, "that we are serving some function in keeping the whole mess going."

"Not at all," Gerten said, downing his drink in a gulp. "ANAVIC says there is every evidence that the message has already been delivered."

Mrs. Kraskov broke the long silence that followed. "Oh, I just despise these scientists," she said almost in tears. ■

While "Intelligence" may be an actual, identifiable entity, our one sample of "intelligent life-form" is a very narrow base for conclusions. We might not recognize what another race used for "intelligence." And neither, remember, would a third alien do any better!

Delivered With Feeling | Lawrence A. Perkins

Grwx extended an eyestalk knowingly. "Have telling at me that yourself have bring Llyrghian crustapods at Thurmhill planet."

"Ah, yes." Arfam Zebudee flicked ash from his cigar. "The crustapods were the natural enemy of the borer flies that were ruining Thurmhilli agriculture, of course." He blew out a lush ring of blue smoke. "The effect on the Thurmhilli themselves was unfortunate, for a while. Totally unexpected, of course."

Grwx angled the eyestalk upward. "Very unexpected. Cause all communication stop. When communication stop, farmers who pay you manage take over planet. Very interesting."

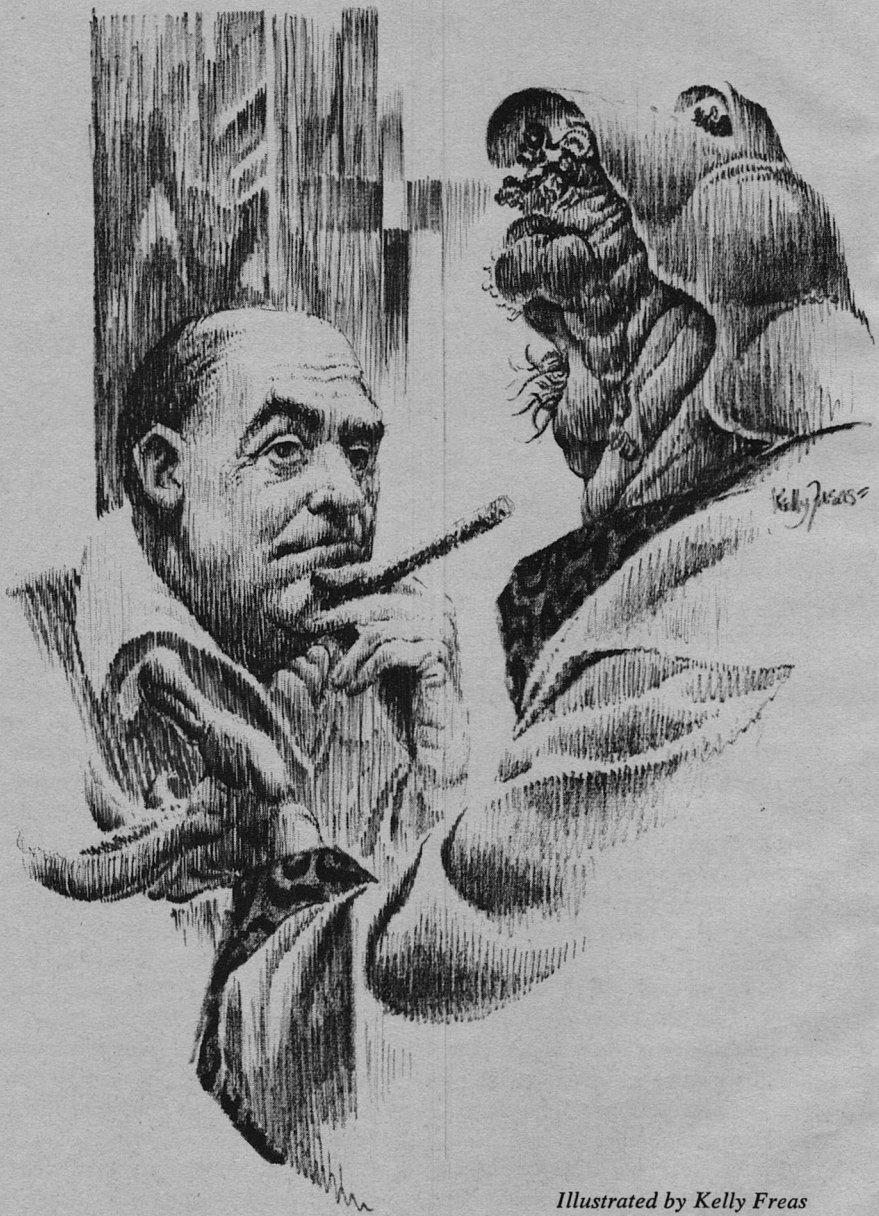
"Very," agreed Zebudee, rolling his cigar between his fingers. "You may also have heard that there was quite an investigation. Everybody agreed that my crustapods were imported for agricultural purposes only, and that they got rid of the borer flies."

"Very expected," Grwx crowed, withdrawing the eye into the cluster of stalks around the top of his head. "Reason for investigation have because of large number unexpected incidents connected with yourself. Always very unexpected."

Zebudee slouched lower in his leather upholstered chair and eyed his visitor evenly. "So?"

"Have large hope that yourself manage again such unexpected incident. I from Qyrnhm. You have heard of?"

"I have heard of Qyrnhm," Zebudee admitted negligently. "Joined



Illustrated by Kelly Freas

the Galactic community twenty, thirty standard years ago. And, I believe, presently being invaded by the Murphtillac. Right?"

"Right." Grwx bowed politely.

"You also must know that every Galactic planet is sworn not to give military advice, or material aid of any sort, to an enemy of the other. Tellus and Murphtillu are both Galactic planets. The idea was that interstellar war between single planets would become impossible, while allowing for a little raiding of undeveloped worlds."

Grwx bowed deeper. "Also have heard of startling outbreak of bunda fever on Accadia. Among faction opposed at those party engage yourself as expert bridge builder. Very unexpected incident."

Zebudee bit into his cigar and puffed vigorously. "Galactic citizen Grwx, I am well aware that the Accadian committee which engaged me later became the planetary council. There have been a number of, ah, unusual coincidences connected with my work. I have already been subjected to a number of investigations. Am I to understand that . . ."

"Pardon, pardon, I make no such. My people, Qyrnhazeth, desperate. I have deputization spend one million Galactic credits engage Citizen Zebudee for arrange unexpected incident." Eagerly the alien extruded a manipulation appendage to display a sheaf of silver-shimmering thousand credit certificates. "This for start. Show we mean serious."

Zebudee puffed on his cigar and indolently waved Grwx toward a chair. "You understand that the Galactic compact is most binding?"

Grwx bowed most politely. He was not built to occupy Tellurian chairs. "Understand that Tellus engage in battlements with Murphtillac. Tellurians fight good battlements. Murphtillac make compact."

"Right. The Galactic compact was really designed to pacify the Murphtillac. In interstellar war there's no such thing as victory if each side can put up any kind of fight. You can blast a planet to a useless cinder, or you can just go away, but you can't win a war. They didn't understand that, at first, and the pact was a way to let them give up gracefully."

"You will acceptance of million credits? For incident?"

Zebudee talked on. "None of us dreamed that a race that could become Galactic would be wide open to surface raiders. But Tellus must honor the compact. No material assistance of any kind to the enemy of any Galactic, and no military advice." Zebudee straightened. "I am only an humble trader, but I am a Tellurian." He puffed on his cigar. "Also, the police are watching me."

Grwx flinched visibly. "Also have deputization in desperation case make offer of two million credits. Yourself have large reputation of unexpected incidents. Qyrnhazeth not have more credits."

Zebudee balanced his cigar on an ash tray with elaborate carelessness. "It's just possible that, for two million credits cash, some unexpected incident might occur. Tell me more about the Qyrnhazeth."

Grwx bowed so low that his body segments creaked. "Qyrnhazeth exist mostly in city groupings yourself would designate feudal. All not speak exactly same language. Also over whole planet have community groupings. Musician grouping, philosopher grouping, doctor grouping. Not speak exactly same language, but all understand each."

"And with a culture like that, your people made it into space?"

"Excuse. Also have mathematician grouping, engineer grouping, other grouping. Three, four Galactic craft make landing on Qyrnhm. Display craft, display engines, to Qyrnhazeth. Engineer grouping make basis on two city groupings. Others interested, too. Spend many of standard year building what learned from Galactics. Galactics always helpful when make landing."

"So they joined up in those two communities, eh."

"Yes, join up. Interested. Qyrnhazeth like to stay in grouping, but not stupid."

"And so you built your own spacecraft and made your own contact with a Galactic world."

"With Gnophyll. By your rules, enough to make for ourself invitation become Galactics."

"And whenever you get a planetary government and make formal application, you'll be accepted. Already you are allowed to use Galactic credits." Zebudee glanced at the certificates which Grwx was still holding. "But how did Murphtillu get into this?"

Grwx stretched his auditors in a gesture of disgust. "Murphtillac make landing, claim insulted."

Zebudee shook his head. "We've always figured that an interstellar war would be impossible between Galactics. Any planet with enough technology to make it into space should be able to make an attack upon itself impossibly expensive. But that's not true of Qyrnhm."

"Not true. Only reason of our still survive free so long because Murphtillu only find necessary send two, three spacecraft of soldier. Take over at own pleasure." Grwx drooped his sensor appendages.

"Maybe not," remarked Zebudee, pulling on his cigar. "By the way, what was the nature of this so-called insult? The one that started the war, I mean. We know how touchy the Murphtillac are. Every one of their cities has an official chamber of honor for fighting duels to the death. But—a war over an insult?"

"Not know. Murphtillac think have learned Qyrnhazeth language. Not have learned. Make mistake, think have insult."

Zebudee flipped ash from his cigar delicately. "But surely with Ga-

lactic translating machines there couldn't have been any mistake about meaning."

"Possible. Happen. Galactics have many trouble with Qyrnhazeth language. Same language, but each group have dialect. But all understand each. Galactics have many trouble. Is because of why I speak Tellurian without translator. One insult already present adequate woe."

Zebudee's eyes began to glow. "Galactic citizen Grwx, I begin to see a possibility. I accept your retainer on condition that you also agree to teach my computer the Qyrnhazeth language, including every dialect that you happen to know." He reached for the shimmering certificates.

"But . . . but . . . on Qyrnhm every grouping have own dialect. Also musician grouping, philosopher grouping, engineer grouping, mathematician grouping . . . many grouping."

"Pardon me, Galactic Citizen Grwx. I don't mean to pry, but I presume that you belong to the philosopher grouping?"

Grwx extended two eyestalks in astonishment and meekly handed over the certificates. "Yes, belong, but have not stated."

"Fine. Then you know the philosopher dialect and the dialect of your own city grouping. And you understand all the others. You're willing to spend two million credits." He glanced with appreciation at the certificates. "Are you willing to teach all of your language that you know to my computers? If you are, I'll guarantee you an incident. Are these credits genuine?"

"Genuine, yes," gasped the dazed Grwx. "But Galactics have exceeding difficulty with Qyrnhazeth. Insult to Murphtillac cause by misunderstand language. Have large doubtings."

"I'll worry about that. Will you teach the computer? It won't be easy, but the fact that you don't use a translator will make it possible. In the process you'll learn to speak perfect Tellurian, but I won't charge you anything for that. Will you do it?"

"Yourself guarantee unexpected incident, I pay and teach computer. But you guarantee?"

"I guarantee. I'll ask for the cash now, but if I don't deliver within three standard months I'll return it with ten per cent interest. But you understand—no material aid and no military advice."

Soloman Goldman, interstellar economist, adviser, and horse trader, poured himself another golden tumblerful of Thurmhilli nectar. "Come now, Arf. How can you possibly help the Qyrnhazeth against Murphtillu? Oh, I know your reputation. But after all—the pact! Planetary watch knows your reputation, too, and the whole galaxy knows that Grwx visited you."

Zebudee negligently reached for

the precious flagon and filled his own tumbler. "Whatever gave you such a seditious idea? I have agreed to study the Qyrnhazeth language to see why it is so difficult. Purely as an economic and commercial venture, without giving any material aid."

Solomon sipped appreciatively. "And what have you found? Their language does seem to present some peculiar difficulties, I'm told."

Zebudee blew a luxurious cloud of cigar smoke. "Actually, all language is a mystery. Sub-intelligent creatures like Tellurian dogs and Zrnthontian *xtuys* are born with a comprehension of certain vocal sounds. Growl at a newborn puppy and it shrinks from you. Certain linguists have tried hard to prove that language evolves from such noises."

"So?"

"So in the Qyrnhazeth language most of the sounds really do tie in with instinctive reflexes. That's why they all speak essentially the same language. Far more than with any other known language, to them a word comes through as a sensation rather than an idea."

"So?"

"So each community has its own dialect. Not too surprising. But each special interest group also has its own dialect. Grwx says that the Qyrnhazeth even have a courtship dialect. They just naturally speak it when the time comes. He tells me that speaking Tellurian seems strange to him because he can't taste it. Most remarkable."

"Quite," agreed Goldman, reaching for the flagon.

Colonel Dywm Ellitec, commander of Murphtillac Outpost Number Seven, scanned the report with obvious dismay. "But this is unacceptable. This is impossible. Three of these grubby city groupings united to engage one of our patrols and wiped out half of it! How?"

The subaltern rippled his tentacles submissively. "Sir. They had already been hurling stones at us with catapults. This time they hurled containers of some high-energy hypergolic liquid. Intelligence thinks it may have been rocket fuel."

"But what made them unite? They don't do that! And rocket fuels are above their culture level!"

The subaltern rippled his tentacles again. "Sir. They are still using primitive catapults. And your colonelship knows that this planet has launched spaceships. Several of them."

"Very well. I presume that we still have hardened vehicles? Order a patrol to wipe out those three city groupings. Flatten everything. Spare nothing. And find out what's going on. Dismissed."

Grwx cautiously approached the Qyrnhazeth outpost, his sensors fully extended to show that he was a Qyrnhazam. "There is no blemish on the manly honor of our forefa-

thers," he intoned. Dozens of heads popped up over the breastworks, reaching their auditors at him.

"Down, you dhutzl-heads, down!" roared someone. "Where's your discipline?" After a brief pause, the voice added, "What did he say?"

Somebody told him, and the roarer approached at once, as exposed as any of his troop. "Welcome, stranger. I am Yrph, garrison commander."

Grwx extended an empty manipulation appendage in friendship. "I am Grwx. I bring you counsel to preserve the manly honor of our forefathers." He spoke solemnly, letting his words strike into the brains of his fellow Qyrnhazeth. He could already hear some of them muttering his original salutation to themselves.

Yrph advanced, visibly befuddled with emotion. "Excuse me, stranger, but I cannot place your dialect. Not artisan, not traveler, not historian. I . . . uh." Yrph stopped, uncertain. Without knowing the status of his visitor he couldn't proceed with the ritual greeting.

"Advance, friend Yrph, and be consoled. I belong to a new category. I am a patriot. We patriots are devoted to the preservation of the unblemished manly honor of our forefathers against the barbarian invaders. Do you also wish to preserve the unblemished manly honor of our forefathers?"

Yrph dimly realized that his ductless glands were spurting. When he began speaking, he noted without much surprise that his speaking organs were changing slightly. He'd experienced such a thing when he'd met Sbfe, now his brood mate. "Yes, friend Grwx, I wish to preserve the honor of our forefathers." He was just a little startled to hear himself speaking the patriot dialect.

Kalli Swmneri, the subaltern, stood at rigid attention while Ellitec studied the report on how the punitive patrol had been totally eliminated before the first of the three offending city groupings. In addition to the catapults, the patrol had run into land mines charged with the same hypergolic substance. The victims of the final attack hadn't been able to report on the weapon which had wiped them out.

Ellitec finally looked up from the report. "At ease, Kalli. Tell me, Kalli, in the Great Dag's name, what's going on here?"

"Sir?"

"I'm sorry if your auditors are plugged, Kalli. I asked you what's going on. First, three city groupings gang up on one of our patrols and clobber it with hypergolic rocket fuel. The next planetary day, they're back with land mines and something even deadlier that the patrol didn't have time to report. What's it going to be tomorrow?"

The subaltern allowed his scales to tinkle slightly. "I really couldn't

say, sir. But it's hard to understand what's going on. Intelligence reports some peculiar influence sweeping the planet. They suspect Grwx, just back from a mission to Tellus, but he seems to be on a walking tour now. He hasn't even got a day's supplies with him."

"Who, or what, is a grwx?"

"Sir, Grwx is a native who was considered a dangerous element, an agitator. Philosopher grouping. We'd have canceled him if he hadn't left the planet when he did. He's thought to have taken a large sum of money with him, too. But since he came back, he's done nothing but stroll around without even a knapsack."

"Kalli, did you come in here to waste my time with useless drivel?"

Swmneri popped to attention and saluted again, twining his tentacles intricately. "Sir. Intelligence seemed to think it was important. Intelligence also reports that since Grwx returned, the natives have adopted some peculiar slogan. It seems to mean, 'there are no body lice on my grandfather's mustache.' Natives all over the planet are picking it up."

"That's all you can tell me? No body lice in your grandfather's mustache, and an agitator named Grwx is strolling peacefully over the countryside?"

"Sir." Swmneri's scales tinkled louder.

"Dismissed. And try to get me a little more information by the time my office opens tomorrow. And oh, by the way, I'm told that officers demoted to the ranks are presently being sent to Jurntilli to command prison details in the methane mines. I'm told that minus sixty Celsius is a hot day on Jurntilli."

"Sir." Swmneri's scales were disgracefully noisy as he saluted and then marched out rigidly.

The harassed subaltern dutifully harassed his own command, and the following planetary day he dutifully presented himself to his superior's office a proper half hour early. He was scandalized to find Ellitec there and already hard at work.

Ellitec had more important things to consider than his subaltern's report. Outposts Three and Five were both out of communication. Intelligence had advised him that city groupings all over the planet seemed to have merged with the special interest groupings, with deadly effect. The native named Grwx, although still not overtly active, was suspected of being the coordinator somehow.

Colonel Dywm Ellitec, veteran of the Tellus campaign, numbly accepted another batch of reports from a clerk. They seemed all too familiar. The sight of his hapless subaltern standing at attention did something to him. Drooping his tentacles, he punched the red button to connect him to the general's office. Already he could feel the chill blasts of Jurntilli.

The visiscreen lit up, displaying a colonel who seemed outraged at being summoned at such an hour. "Well?" he bellowed.

"Sir," quavered Ellitec. "Outpost Number Seven was ordered to proceed at minimum technological level against the natives. Until the last two planetary days, I have proceeded as rapidly as Colonial Corps behind me could consolidate. However, sir, there seems to have been a sudden change, and two of my flanking Outposts no longer answer to communications."

"What do you want me to do about that?" The officer ranked no higher than Ellitec himself, but as a member of the general staff he was formidable.

"Sir. There seems to have been a radical change in the situation. Natives who were catapulting rocks at us two days ago are wiping us out with hypergolic land mines. Two Outposts have gone silent. I had hoped to speak to the general, sir."

"Umph. Incompetent, eh? Very well, I'll make a note of it and have the general call you. But I hope you like the climate on Jurntilli." The colonel broke the connection.

While Ellitec waited for the general to call, he passed the time in grilling his miserable subaltern. But Swmneri had no fresh information. Only that the Qyrnhazeth were uniting and organizing. Offhandedly Ellitec ordered that Grwx be captured, interrogated, and tortured to death.

The visiscreen stayed blank. Dismissing Swmneri, Ellitec returned to the reports. None of them were good. Unhappily he reminded himself that this planet was capable of space travel, and there were rumors of a nuclear plant somewhere. But hadn't the natives been using boulders shot from catapults two planetary days ago?

When the visiscreen lit up peremptorily, Ellitec was actually relieved. The chamber of ancestral honor, Jurntilli, anything was better than this wondering and not knowing. "Sir!" he acknowledged, twining his tentacles as tightly as possible.

"At ease," snapped the general. "I understand that there is some indecision at Command Post Number Seven. Does Murphtillu need a new officer in charge there? Have my men suddenly become incapable? Good colonel, please advise me."

"Sir!" Ellitec saluted again. "Two local days ago I would have agreed with the general's suggestion. But peculiar things are happening. In one day the natives stepped up their defense from catapult-launched rocks to canisters of rocket fuel. The next day they moved on to land mines and some other unknown weapon that wiped out one of my patrols. Sir, there is said to be nuclear capability somewhere on this planet."

"So today, no doubt, you expect a fusion bomb to arrive by transplanetary missile."

"Sir. It takes time to build missiles. But they do have other things. If they unite . . ." Ellitec fell silent as a sudden red glare illuminated the general. The general turned and shouted something, and then the screen went blank. Hopelessly Ellitec jabbed his red button. Nothing happened.

Then he hesitated briefly, but after all, he was still a Murphtillac officer. Perhaps the bracing climate of Jurntilli would be good for him. Breathing deeply, he pressed the black button on his communications panel and waited for the transspatial seeker circuits to find an open channel to Murphtillu.

The black-robed judge pounded with his gavel. "Will the defendant stand."

Zebudee uncoiled his spare frame and rose to his full height. The silence in the courtroom was absolute.

"This court is convinced that you received the incredible sum of two million credits from Galactic Citizen Grwx," the judge intoned. "Further, that this same Galactic Citizen Grwx returned to his home planet, Qyrnhm, and that immediately thereafter his people—previously in a hopeless military situation—drove off invaders in only three standard weeks and made the prosecution of that invasion economically impossible.

"Those invaders were the Murphtillac, fellow Galactics, with whom we have a most solemn compact not to render military advice or material aid to enemies of the other. Qyrnhm was, at that time, an enemy of Murphtillu. The conclusion seems inescapable that for two million credits you somehow rendered aid or advice to Qyrnhm, in violation of our treaty.

"However, none of the witnesses have been able to show that any material assistance of any kind reached Qyrnhm during the invasion. On the contrary, we have seen that the suddenly organized defense of the planet was carried out entirely with materials already there. Research devices of physicists, modified by engineers and used by villagers, became deadly overnight.

"Neither has it been shown that any military advice was rendered by you to Galactic Citizen Grwx, or by him to the Qyrnhazeth after his meeting with you. In fact, it has been shown that the Qyrnhazeth defense was notably lacking in military skill, depending entirely on surprise and technology.

"This court finds it an incredible coincidence that a person of your reputation should accept two million credits from a client whose people is suddenly able, a mere four weeks later, to revolutionize their culture and repel an invasion force which until then had been virtually unopposed.

"Nevertheless, your counsel has introduced evidence that this fee was in fact for the study of the dif-

ficult Qyrnhazeth language, and that you have in fact prepared a lexicon of this previously baffling language so that Qyrnhm can now communicate surely with other Galactics. This court, therefore, has no choice but to find you not guilty."

The gavel banged again, and pandemonium broke out in the courtroom.

Soloman Goldman gazed into his tumbler of golden Thurmhilli nectar. "Come on, now, Arf. The court found you innocent. You can talk—and I won't."

Zebudee stared blandly at his friendly rival. "I'm surprised at you. You know that the Qyrnhazeth are both intelligent and capable. They were just fragmented. One group tackled space travel and licked it. Another bunch had a nuclear reactor going. Sure, they had help from Galactics, but you've got to be good to be able to use that kind of help."

"You seem to have given them some pretty good help yourself."

Zebudee blew a puff of blue cigar smoke and watched it rise. "I couldn't give them any material aid. I couldn't give them any military advice. Neither would have helped them anyhow, fragmented as they were. So I gave them a slogan. Think what 'remember the Alamo' and 'they shall not pass' did for some of our own people back in preatomic times when we still had planetary wars."

Goldman almost dropped his glass. "A *slogan,* Arf? To repulse a planetary invasion? You're joking!" Then he stiffened. "Not that 'body lice in my grandfather's mustache' thing that the Murphtillac were babbling about?"

"That's what it sounded like to them, Solly. I asked my computer to fill that slogan as full of linguistic booby traps as possible. It's easy. Even without trying, here on Tellus back in the era of many languages, we had people wondering why Cinderella should have worn glass slippers, or what made Nero fiddle when Rome burned. But that was only half of it."

Goldman sipped nectar mechanically. "What was the other half?

"The other half was to give the Qyrnhazeth a slogan that would incite them really to devote themselves wholly to their fight against the Murphtillac. Oh, sure, when the invader came right up to their city groupings they were ready to fight, but what could city groupings do?"

"Hold on a minute, Arf. I know that there've been good slogans. But not even 'remember the Alamo' impressed everybody."

"It impressed everybody that it was aimed at, Solly. And on Qyrnhm the whole planet was ready for a good slogan. Besides, remember what I told you about their language? It comes to them with the full force of direct physical sensation."

"So?"

"Remember what I told you about

their courtship dialect? I suspected that if we could work patriotism to its ultimate pitch, and that if Grwx would co-operate, we could develop a new dialect that would cut right across all the old groupings.

"Speaking the old dialects, every Qyrnhazam identified himself as a member of a narrow interest group every time he spoke. He was typed, both to himself and to everybody else. And no philosopher, for example, would really listen to an idea if it came to him in artisan dialect.

"When they started speaking the patriot dialect, it made all of them members of the same cult. It baffled them that they were still philosophers and artisans and peasants, but they were united. One of them had an explosive, another one had an idea about how to deliver it, and a third one could take real hardware and make the idea work. Speaking the same dialect put all of them on the same team."

"And it worked?"

"It worked. Their feelings, their emotions, carefully guided by Grwx and his growing team of contact experts, united them into a single class of patriots. They still have enough citizens in that supercategory to form a government. Citizen is going to be 'High Qyrnhazeth' from now on. And their unity delivered them from the Murphtillac. And now . . . what's the matter?"

Goldman almost choked on his nectar, then poured himself a fresh tumblerful and raised it in salute. "Here's to you, Arf—the most expensive elocutionist in history."

Zebudee stared at him in bafflement. "How so?"

"Why, the liberation of the Qyrnhazeth, of course. For two million credits, you delivered them with feeling." ■

THE ANALYTICAL LABORATORY

APRIL 1965

PLACE	TITLE	AUTHOR	POINT SCORE
1.	Goblin Night	*James H. Schmitz*	1.75
2.	The Prophet of Dune (Pt. 4)	*Frank Herbert*	2.02
3.	No Throne of His Own	*Lawrence A. Perkins*	2.97
4.	Fad	*Mack Reynolds*	3.23

THE EDITOR

SEVEREST CRITIC

Present-day science fiction has had only two American critics who take it seriously enough to judge it by the same standards that are ordinarily applied to "main-line" fiction. The rest of us, myself included, look on it as a minor genre within the general fiction field, to be appraised by a set of standards tailored to fit the form. Indeed, it has been argued justly that we are reporters, not critics at all.

This statement, note well, excludes most or all of those established reviewers of current literature who write for the larger newspapers and the large and small magazines, and who from time to time undertake to evaluate a science-fiction book. By and large, their critiques show that they do not understand what they have read. They simply do not take science fiction seriously.

The exceptions are Damon Knight, whose reviews for the professional magazines were collected by Advent: Publishers, in a now out-of-print book called "In Search of Wonder," and James Blish, who wrote a series of critical essays for various fanzines under the pen name "William Atheling, Jr." Some of the more useful of these have now been published by Advent under the title "The Issue At Hand" (Advent: Publishers, P. O. Box 9228, Chicago 60609; 1964; 136 pp. $5.00). The book also includes Blish's addresses at the World Science Fiction Conventions in Pittsburgh (1960) and Washington (1963).

One handicap for the average reader is that several of the essays analyze the contents of specific issues of magazines, and pointed out the shortcomings of some stories

which were so very bad that they have never reappeared in anyone's pickup anthology. However, these essays are reprinted because every one of them has a point to make about what is and what is not good fiction. Every editor should know, and should impress on his would-be and regular authors, the fact that there is "a great deal of accumulated experience as to how a reader reads, and what techniques give the reader the greatest access to what is important in the story." If these techniques are not used intelligently—and if there is nothing important in the story—James Blish would insist that it cannot be either good science fiction or good fiction of any kind.

Most of the thirteen chapters, however, deal with books, stories and subjects which are not obscure and are fair targets: religion in science fiction, including Blish's own "Hugo"-winning "A Case of Conscience" . . . Heinlein's "Stranger in a Strange Land" . . . the superiority of British reviewing of science fiction . . . the incompetence of editors, generally, generically, and specifically.

If you have the ingenuous attitude, which many fans and a few editors affected a few years ago, that science fiction is per se "the literature of the future," then "The Issue At Hand" is no book for you. Held to Blish's standards, not enough good science fiction is being written to keep one magazine on the stands. But if you're willing to take a very hard, analytical look at the stuff, you are going to have to read it.

THE 9TH ANNUAL OF THE YEAR'S BEST SF

Edited by Judith Merril • Simon and Schuster, New York • 1964 • 384 pp. • $4.95

Let it be known that Judith Merril is back in her finest form with an anthology that has everything. Let it also be remembered that "SF," in this context, means "science/fantasy," and you won't be disappointed. Some of the best stories in the book belong on the fantasy side of the slash.

Analog is represented by four out of twenty-three stories this year, edged out by *F&SF* with four stories and a poem. But the range of the anthology covers *Atlantic Monthly, Paris Review, Saturday Review* and *The Reporter* along with *Playboy* and *Dude. Saturday Evening Post* is still in there fighting with one story and a cartoon. A relatively new magazine that has never been on sale in a town where I've been, *Gamma,* also makes it.

But let's start with the stories from Analog, which you may be supposed to have read. Remember Lloyd Biggle's "A Slight Case of Limbo"—the man who rescues an extraterrestrial, whose rewarding kindness was so cruel? The ridiculous "Poppa Needs Shorts," by

Walt and Leigh Richmond, with Little Oley's strained logic? Frank A. Javor's "Interview," about as cruel an extrapolation of a certain type of TV newsman as you are likely to get? E. C. Tubb's "The Ming Vase," a grand mixture of ESP and espionage with logic and paradox? Then renew your acquaintance.

Of the remaining science fiction, I find it hard to choose between William Tenn's "Bernie the Faust," in which a compulsive swindler sells the Earth but is unable to let well alone, and W. J. J. Gordon's "The Nobel Prize Winners," from *Atlantic,* which is an ironically straightforward story about the place of scientists in our society. And then there's Alfred Bester's wholly human "They Don't Make Life Like They Used To," with its straightjacketed man and woman alone in a dead world.

There's more "straight" old-fashioned Analog-style science fiction in this year's volume than there usually is. Fred Saberhagen's "Fortress Ship" presents the problem of defeating an invincible, berserker warship out of nowhere, programmed to destroy anything that comes near it. "The Great Nebraska Sea," by Allan Danzig, is that even more old-fashioned thing, a flat description of a catastrophe, plotless and effective. "On the Fourth Planet," by J. F. Bone, is the realistic account of our forthcoming attempt to detect Martian life, as seen by one of the Martians. And Hal Clement offers a nest of technical problems in "Hot Planet," *Mercury.*

Remaining on the left of the partition are two rather wild tales, Bruce McAllister's "The Faces Outside," with mutated humans in an ET aquarium, and Ray Nelson's "Eight O'Clock in the Morning," a quick switch on the "we are owned" theme. Andre Maurois' "The Earth Dwellers" is literary satire—Earth seen by outsiders—but not his best. And Cordwainer Smith's "Drunkboat" is purely indescribable. The world he is creating in these stories is like a tapestry by Chagall.

As for the fantasies, they are rich and good, but Bernard Malamud's evocation of folkways in "The Jewbird" will stand out for years. Who can forget it? And Charles Beaumont's "Mourning Song" is its counterpart in synthetic "old American" folklore. R. Bretnor, with "Mrs. Pigafetta Swims Well," makes the siren legend modern, down-to-earth and hilarious. Fritz Leiber, with "237 Talking Statues, Etc.," arranges an outrageous confrontation between a harassed son and his deceased but noted sire, and Fredric Brown—who else?—describes the horrified reaction of a noble TV personality who discovered the goings-on in the world in front of the picture tube. Finally, Gerald Kersh tells another of his tall tales about the

man who sold time, "Bargain With Cashel."

I find that I passed over a very short fable, "Confessions of the First Number," by Cliff Owsley, otherwise 420 03 2557. It satirizes the predicament that is upon us all. Ben Bova contributes a timely article, "Where Is Everybody?," which asks why we aren't a vacation resort for the great races of the Galactic Federation. Richard Matheson has the kind of poem that I can feel and understand, unlike the touted "Aniara." It's called "The Jazz Machine." And as leaveners there are three cartoons, the editor's comments on the year, Anthony Boucher's summing up of book-length SF in '63 (I can't go with him on Heinlein's "Podkayne of Mars"), and above all Miss Merril's connecting comments that tie story to story.

"8" was the low point in this series; now the trend is up!

OF MEN AND GALAXIES

By Fred Hoyle • University of Washington Press, Seattle • 1964 • 73 pp. • $2.95

This is not an account of astronomer Hoyle's latest modifications of his Steady State cosmology, with its revision of Relativity and new theory of gravitation. It is a collection of three quite general philosophical lectures given at the University of Washington.

"Motives and Aims of the Scientist" discusses the feedback effects of our technological world upon the science which has helped create it, and in particular the effects of the bigness, expensiveness, completeness that is considered essential for the bare minimum of work in a modern laboratory. He accepts Sir Charles Snow's concept of the "two cultures," but suggests that Big Science is more dangerous to itself than to the nonscientific society from which it is separating itself. The need, he urges, is for a single culture in which potential greatness can be converted into actual greatness. Efficiency, he feels, can probably be imitated by a computer; the effects of spontaneous inspiration in a genius cannot.

The second section, "An Astronomer's View of Life," is a brief summary of the reasons for the author's belief that there are many centers of intelligent life in the Galaxy and the Universe. He suggests that there may be a kind of Galactic party line or conference hookup with a million or so subscribers—great civilizations, all in touch with each other, which may one day accept us into their fellowship.

"Extrapolations Into the Future," the final segment of the book, spits out ideas like a fireworks display. There is material for a dozen Pohl/Kornbluth-type novels here. That the one common element of our society is the drive for status, dominant in the developed nations, rising fast in the new countries. That as comfort and boredom increase,

science and technology are forced to become entertainment industries in order to bribe and entice support from a lethargic public. That "man is not in charge of his future and . . . never has been": "we are traveling in a vehicle that guides itself."

Intelligence will arise on all worlds that develop life, Hoyle contends. Expanding societies everywhere will presently use up their fossil fuels and be driven to develop other sources of energy, or collapse. Every world has this one chance to get over the hurdle or forever fail, but the route to success is not necessarily the obvious or easy one. We need the experience of civilizations that have made it, and the warning of those that have not, and we may, Hoyle suggests, get our help from the stars.

REPRINTS

DIVIDE AND RULE

By L. Sprague de Camp • Lancer Books, New York • No. 72-768 • 1964 • 160 pp. • 50¢

Two minor classics that are as good as they were twenty-five years ago. "Divide and Rule," in which a future feudal society attempts to make things miserable for their kangaroo-like "Hopper" conquerors, was a two-part serial in *Unknown* in 1939. "The Stolen Dormouse," which pushes an industrialized society to its wacky but logical extreme, describes a war between the Crosleys and the Strombergs over a stolen "dormouse". It was in Astounding in 1941—also a two-parter. If you haven't read 'em, and don't now, you're nuts.

CAT'S CRADLE

By Kurt Vonnegut, Jr. • Delta Books, New York • No. 1149 • 1964 • 231 pp. • $1.65

This was also a "Hugo" contender, though I missed it in my announcement of the nominees. It's certainly the farthest "out" of 1963s SF novels, with a synthetic religion, a world-wrecking invention, completely screwy characters, and the most surrealistic of goings-on.

VOYAGE TO THE BOTTOM OF THE SEA

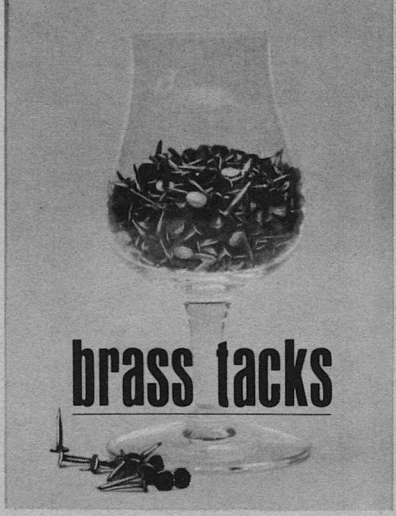
By Theodore Sturgeon • Pyramid Books, New York • No. R-1068 • 1964 • 159 pp. • 50¢

Reissue of the original paperback written from the script of the hokum-packed 1961 movie, which launched the present TV series. Caught your breath?

WAY STATION

By Clifford D. Simak • MacFadden-Bartell Books, New York • No. 60-198 • 1964 • 190 pp. • 60¢

This one took the 1964 "Hugo" award for best SF novel away from Heinlein's "Glory Road" and Vonnegut's "Cat's Cradle." It's the story of a Civil War veteran who mans an interstellar transit station on a Wisconsin farm.



Dear Mr. Campbell:

Re Joseph Jackson's fascinating article (Analog, December '64): Here's a layman's two bits on the subject of the moon's effect on the weather. Or two quarters, I should say, in deference to the goddess.

Here in Key West on November 13, 1954 we racked up a not so tidy 19.88 inches of rain in 24 hours; the sea turned fresh for miles around. A report cited in evidence by Mr. Jackson notes the "tendency for extreme precipitation in North America to be recorded near the middle of the first and third weeks of the synodical month, especially on the third to fifth days after . . . new and full moons." Full moon in November 1954 came on November 9, four days before Key West's private deluge, which consequently arrived right on the button.

Consulting the 24-hour rainfall records for the U. S., as compiled by the *Information Please Almanac*, and discounting what may be my "wishful arithmetic," I come up with the following breakdown:

Location	*3-5 days after new or full moon*	*Elsewhere in "wet" period*	*In "dry" period*
Silver Lake, Colo. April 14-15, 1921 76 inches (snow)	*		
Hoagee's Camp, Calif. Jan. 22-23, 1942 26.12 inches	*	* (borderline)	*
Yankeetown, Fla. Sept. 5-6, 1950 38.7 inches	*		
New York City December 26, 1947 25.8 inches (snow)	*		

I have a history of Vermont published in 1831. The only two storms mentioned between the settlement of the state and 1831 classify thus:

Location	*3-5 days after new or full moon*	*Elsewhere in "wet" period*	*In "dry" period*
Central Vermont July 22, 1811 12-15 inches		* (day after full)	
Vermont July 25, 1830 Severe flood		* (day after new)	

As one would surmise, the new-moon, full-moon weather phenomenon does not seem to be limited to North America. The *Encyclopedia Britannica* reports (sketchily) the following data on world-wide 24-hour records:

Location	*3-5 days after new or full moon*	*Elsewhere in "wet" period*	*In "dry" period*
Cherrapunji June 14, 1876 41.4 inches		*	
Alexandria December 9, 1888 9.6 inches			*
Berlin April 14, 1902 6.6 inches	*		
Fiji August 8, 1906 37.6 inches		*	
Baguio, Philippines July 14, 1911 46.7 inches	*		
Bruton, England July 28, 1917 9.7 inches	*		

Add Key West to the records which happened to be available to me, and the score is 7 storms in 3-5 day period, 4 in wet period, 1 in dry and 1 borderline. Even if you call the borderline a "dry," the chances are 11 to 2 that a storm will occur in the wet period and 7 to 6 that it will be in the 3-5 zone.

Perhaps there were nodical influences at work in some of these cases, too. I don't know. But this I do know. If you ever plan a picnic for 3-5 days after the new or full moon, don't invite Jackson or me. We won't come.

We had a severe thunderstorm here last Saturday night, breaking a long period of drought. I'd like to be able to report that it came in the 3-5 day period. Alas, it did not. (But the new moon was one day before!)

COLIN G. JAMESON
1501 Olivia Street,
Key West, Florida

But it has been notorious for years that the annual Weather Bureau Picnic gets rained out!

Dear Mr. Campbell:

There have been times when I didn't read your editorials in Analog. Why I did not read these superlative essays on just about everything escapes me at the moment. But then I read one of them that perked up my outlook. Now I read them avidly, first thing, upon receiving the issue in the post.

As you may have heard from various newspaper dispatches and articles the University of California at Berkeley has been having a few problems of late. These problems have concerned the student body, faculty, the state government, graduate students and the other state colleges including San Jose State which I am attending now. The problems stem from a group of students—a small minority group, I might add—on the UC campus which has risen up in defiance of the University, claiming that "the students rights of free speech have been suppressed".

The issue stems from the fact that the University was enforcing some basic school policies regarding the recruitment of members for a political party on the campus itself. The ruling said, in effect, that students were not able to collect money or recruit for a political party on the school grounds of the University of California. Recruitment *outside* of the school grounds, or on an area in the school grounds which was *specifically specified* by the administration, was allowed.

However, some students, the aforementioned minority group, felt that this was an infringement upon their rights of free speech as specified in the Constitution, and they set about to change the ruling of the administration.

In fact, it must be remembered that their right of free speech was not being infringed upon or canceled on or around the University; they could still make political speeches and such, they could not *recruit* members for a particular political party. They forgot the fact that a University or a school of higher learning is not just a political platform or a place where someone goes to recruit members for his political party; it is not a place a person attends in the guise of a student to foist his political ideas upon others—a University is a place of learning, and as related to the political question involved here, a place of beginning to understand the various political philosophies that are around nowadays. Universities must try to be neutral in their views as much as possible in order to allow the student to make up his own mind; if the student cares to join a political party, let him do so off campus where it is normally done.

This minority group decided, for all the 27,000 students, that free speech at the University was doomed, that it was dead, in fact. So, utilizing the mob principle, they set about to bring the University to its knees to appease them. This is where your editorial in the December Analog really hits home. "The Mobsters" depicts the goings on at UC with so much accuracy that I couldn't help but write and tell you how correct your reasoning is.

You say in your editorial that "an army was organized into being." This is also applicable to the mobs today which are fighting for a "democratic" or "socially just" purpose. Further on in the article you make note of the fact that, in addition to the usual Communist and Fascist mob leaders there are men of other motivations who are using mobs to their advantage. The leader of the mass sit-ins—this is the method used at the University, along with rallies, protest demonstrations, and walkouts—could be a Communist or a Fascist, the methods used were of the type that communists and others would use. It was noted by one who had seen this twenty-one year old philosophy student speak and who had been in Germany in the World War II era and had seen Hitler speak, that he "sounded like another Hitler." This, of course, doesn't mean that the student *was* another Hitler, it simply means that he used the same means of mob psychology to whip his mobs into shape.

Another point that you noted and this was proven to be true at the University demonstrations, was the statement that "one fundamen-

tal of mobster technique is to establish that the mob action they are about to launch is 'a peaceful demonstration' ". At UC this situation prevailed. The demonstrations were peaceful all right, *until* the police had to drag the limp bodies of the protesting students away to jail. Then the necessary martyrs were produced; the students who were arrested and hauled off to jail supplied the martyrs and hence the absolutely necessary claims of "police brutality" could then be raised. As far as the "police brutality" was concerned, no bruised or broken members of the demonstrating students were found. The only bruised parts were those which were in contact with the stone steps of the administration building as the police dragged the limp people away. But again, as you said, the martyr complex reared its head and the claims of brutality were then raised.

These mobsters blew the supposed problem up until the original supposed problem became lost in many and varied generalizations of how the University was mistreating the rights of the students as far as their rights were concerned. However, at no time was there ever any concrete statement uttered other than this: "our free speech is being suppressed" and even this, without being clarified, is a classic generalization. Here again you hit the nail on the head in your editorial when you said that it didn't matter *what* the mob action was for, just so the aims of the leaders were such that the gullible and the misinformed "suckers" could be enticed to join in and accomplish the purpose of the leaders.

Women students and babies in the arms of their student mothers were everywhere in evidence in the forefront of the mobs when they gathered for their sit-ins and rallies and demonstrations. "The mobster wants to make all weapons—even their fists—useless. That's why they are so careful to send women and children first into their 'peaceful demonstration' mobs".

I think that perhaps the leaders of the "student Free Speech Movement" had read your article, for they followed your four rules of a successful mob action to the letter. And they did make the administration surrender in the end.

Yessir, John, your article was indeed prophetic. I just wish that the methods of mob dispersal mentioned in your editorial had been used; the mobs and the sit-ins wouldn't have lasted five minutes. The powers that be at the University used reason on the mobs and as you well know, mobs have absolutely no need for reason. If the

people involved in the mob ever stopped to reason why they were there, they would all get up and go home and go to bed.

So, thank you for your excellent articles (editorials). From now on, I'm reading 'em all the time and taking notes!

December's Analog was one of the best ever, and I was hard pressed to decide for the An Lab as regards five of the six stories—including the serial. The story which receives my vote for first place is "Rescue Operation," by Harry Harrison. This tale is positively one of the most powerful that I have ever read; as it was I read it three times and after each reading the impact was not lessened in the least. Let's have more of Mr. Harrison. Second place goes to "Contrast," by Christopher Anvil. A fine story which just barely edged out my third place vote "Plague on Kryder II," by Murray Leinster which was an excellent tale. Then comes the fourth place "Shortstack," by the Richmonds who have finally written about something interesting. Fifth goes to "Sweet Dreams, Sweet Princes," by Mack Reynolds and finally my sixth place vote goes to "The Equalizer," by Norman Spinrad, which was a strictly nothing type story. I just know that Spinrad can write better yarns than this.

And for heaven's sake, will you please have Christopher Anvil tell us what happened to Al and those Banjo-birds? "Bill for Delivery" just can't end there! As usual, Analog was voted the best professional magazine—naturally, who else? Congratulations.

CRAIG ANDERSON
325 South 10th St.,
San Jose, California

"Free speech" at a University raises problems! Consider: They are now holding that a student should be free to recruit members for his party anywhere on/in the University. Assume that is allowed. Then "a student" is free to recruit anyone, anywhere.

But a graduate student is "a student."

He is also, very commonly, "an instructor."

This makes it proper for "a graduate student" to use his classroom to recruit members for his party—which can be quite effective, particularly near the end of a marking period.

And if an instructor can recruit, what legal distinction or moral-ethical distinction can we make in limiting the "free speech" of a full professor?

The Supreme Court long since decided that there are limitations on freedom of speech; as Justice Holmes put it, "Freedom of speech does not include the freedom to stand up in a crowded theater and cry out 'Fire!' "

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continued from page 7

is a state-law backed guarantee that the customer shall always be forced to pay an inflated price for merchandise, said inflated price being required by law so that an efficient merchant cannot sell the goods at a lower profit margin.

That the merchants would be in favor of such a law *seems* obvious; but why were these "Fair Trade" laws, which assured the consumer that he would be equally gouged by all merchants popular with the consumers? That seems utterly incredible, doesn't it? Yet they were; consumers supported and applauded those laws that assured them that they'd get stuck with the same merchant's profit margin everywhere!

Actually, it wasn't consumer groups that broke down the "Fair Trade" laws—it was merchant groups! The merchants were the ones who worked to have their inflated-profits guarantees removed!

Reason: Under "Fair Trade" laws, a man didn't have to shop around, judge quality and judge reliability of the merchant, or take trouble checking to see if he couldn't find a more efficient merchant who could operate on a lower profit margin. He could go into the first store he saw, say "Gimme one of them!", and walk out assured that he wouldn't find his next door neighbor had the same thing that he'd bought ten or twenty dollars cheaper from a more efficient merchant.

It relieved the consumer of the pressure to use judgment and make decisions. It cost him an extra 50% or so—but he was happy to pay that to be relieved of the problem of deciding.

Successful and efficient merchants get that way by having a high ability to make astute decisions, and accurately evaluated judgments. They have the talent in high degree—and they enjoy using it, as any man enjoys doing what he has a special talent for. The successful merchants wanted to be able to use their talent—and wanted, therefore, to get free of the rigid rules of "Fair Trade" pricing.

People are *not* all equal. You may hold that the man who wants to serve another, have someone else tell him what to do, and when to do it is a vile, slavish, servile, despicable, not-a-real-man type. And so you make a decision for him, and command him to make his own decisions, and not listen to the instructions of wiser men—tell him he must stand up on his own feet, and think for himself. That's what's good for you, isn't it? And all men are equal, so it must be good for him, too, mustn't it? Just because he's a moron who isn't capable of such decisions is no reason why he should be relieved of the responsibility, is it? Make him do it! Lash

him with scorn and public rejection and demean him if he tries to find someone he can trust and rely on and be loyal to. You wouldn't like to be that way, so obviously (all men being equal) he shouldn't like it; it isn't good for you, so you know it isn't good for him.

Give him a slogan to be loyal to, instead of a judicious human being. Give him a slogan like "All men are equal!" that he can put his faith in, because slogans are *always* reliable, they *always* work.

Our culture descends partly from the Roman and partly from the Jewish; the Christian philosophy is a hybrid of the two. Like most hybrids, it has some of the hybrid vigor resultant from combining good characteristics from both—and some of the weaknesses resultant from including the worst of each.

One of the worst we got straight from the Romans—who were great organizers, and lousy philosophers. That's the curious concept that The Law Is Infallible. (The Catholic Church has that as a doctrine, explicitly expressed, in terms of Papal Infallibility in matters of Faith.

A simple, clear, and yet rather subtle example of that doctrine of Legal Infallibility is the fact that if a man is tried and convicted of a crime, and it is later discovered that it was a case of mistaken identity—the wrong man was convicted—the Governor of the State signs a *pardon!*

How can you pardon a man for something he didn't do?

It's the only thing you can do under the hidden-postulate rule that the Law is Infallible. You can't sign a Certificate of Exoneration; that would mean that the Law had been wrong!

A couple centuries ago, the real Sheriff of Nottingham (not the legendary one of Robin Hood fame!) was hanged for murder, because he had executed a tried and convicted criminal, acting on a death warrant that proved to have been improperly made out. Since he had killed a man without *proper* warrant, the exact punctilio of the Law (which is infallible, of course) had been violated, so he was guilty of murder. Q.E.D—with all the organized logic of the ancient Romans.

This led to the establishment of the Court of The King's Conscience, or Court of Equity, wherein not Law, but Justice reigns.

In "Merchant of Venice," Antonio is saved from losing a pound of flesh when Portia brings a point of legal punctilio to bear; Shylock can have the flesh only if he can take it without a drop of blood being spilled.

The ancient Jewish tradition—which the Moslem tradition maintained, since it didn't go through the Romanization that Christianity did—holds that the law must never be used to destroy a man—i.e., that the purpose of Law is to achieve Justice, not mere logic.

The concept of "A government of Laws, not of Men," is a Christian concept—and means "I want to be ruled by a computer, not by men."

The Jewish-Moslem tradition would never have hung the Sheriff of Nottingham—and if Shylock had been a merchant of Constantinople, instead of Venice, he'd have collected his pound of flesh. Under the Moslem tradition, Antonio would have been guilty of trying to welch on a bet he'd made, simply because he found he was about to lose it.

One result of the Christian doctrine of the Infallibility of the Law is that we have to have a trick correcting device we call "Mercy." Mercy's function is like that of the Governor's "pardon" for a man proven innocent—to allow a degree of Justice to be achieved when the Law, in strict application, would be irrational.

A recent case, for example: A man was married, and had several children—and one day, disappeared. A decade later he was discovered in another city, married to another woman, established in another business.

Now here is a clear case of bigamy. The Law prescribes penalties for bigamy.

But in this case it was clearly demonstrated that the man had had an accident, and suffered total amnesia; psychiatric examination established that he had no memory whatsoever of his previous life.

This is no problem under the Jewish-Moslem tradition; justice is readily apparent.

Under our rigid Infallible Law doctrine, justice can be achieved only through "pardon," by application of mercy.

Mercy is, in very large measure, a rationalization device by which we achieve a necessary result without admitting the unpleasant truth —that the Law can, indeed, be an ass.

By a simple extension of this principle, not only is Law infallible, but philosophical doctrines, and slogans are endowed with the same mantle of Infallibility. Thus Democracy is Always The Right Answer. And Equality For All Men must be applied everywhere, however many people it ruins.

And Americans go into Southeast Asia, with those very alien cultural concepts driving them and the American people at home demanding that American statesmen apply those Eternal And Infallible Truths. And Southeast Asia has philosophical concepts, and problems, that Americans don't appreciate, and *know* must be wrong, because Americans know the Great Truths.

The term "imperialists" that is so freely applied to Americans by the non-European section of the world is completely false. We aren't; we know it, and the Europeans—who share our cultural traditions—know it.

It's not imperialism—it's a fan-

tastic arrogance! We accept the doctrine of "I am my brother's keeper," and try to live up to it. Only—which the Thoughtless Liberal slogan-quoters overlook!—a "keeper" is someone who cares for *and directs and controls* someone who is incompetent or irresponsible, for that person's own good *as the keeper sees it.*

Works fine, to the great advantage of all, *if the keeper is right.* But it turns into a cruel Procrustean Bed if the keeper happens to be wrong.

Remember that Torquemada, the Spanish Inquisitioner, tortured and dismembered heretics in a great effort to make those poor sinners see their mistake, and confess their sins and shrive their souls. Because he knew that it was far, far more important to prepare for the eternal life to come than to be comfortable and healthy in this life. He was his brother's keeper, striving to rescue those incompetent and irresponsible souls from the danger of eternal damnation.

Procrustes was at least aware that he wasn't helping his victims! His arrogance was as nothing to that of Torquemada.

We Americans are arrogant in Southeast Asia. Our governmental concepts are completely inapplicable; our ideas of what's good for people apply only to people at a particular stage of cultural evolution—ours. What's good for a twenty-year-old genius isn't good for a twenty-year-old moron, and vice versa. What's good for a normal ten year old is a cruel imposition on a normal twenty-year-old. People—and cultures—*are not equal.* They shouldn't be; to think they should, or are, is to believe in an absolute fantasy—a fantasy any living-sciences student can prove completely. The distribution curve applies to *all* biological systems—and a culture is a biological system, whether it's in a Petri dish or a nation.

South Viet Nam quite obviously needs *not* a civilian democracy—which we arrogant Americans have sought to compel. The coups and countercoups would be utterly ridiculous—if they weren't tragic.

Our efforts in the Congo have been accused of "imperialism," and know that charge to be false. What we've missed is that the correct charge is "arrogance" and, perhaps, "Procrusteanism." Or maybe we should call it "Keeperism." "For Their Own Good!" is a vicious concept, when it means stretching the victim to fit a bed that fits us so comfortably.

What would we do if we should land on some alien planet, and find the local native race practices polygamy? Overlook the relevant fact that this race happens to have a two-to-one female-to-male birth ratio, and impose on them the Good Way of monogamy? How shall we do it—kill off half the girl babies at birth, so the birth ratio becomes the

Right One? How will our local administrators handle this problem—and satisfy the Folks Back Home who Know What's Right because they've grown up with Infallible Laws? Will those Folks Back Home allow the administrators to maintain that awful-hideous-immoral system of polygamy?

It's a lot easier to see the problems when we transplant them to a visibly-alien environment—but they're fundamentally the problems we're faced with on Earth.

Why is North Viet Nam so much less turbulent than South Viet Nam? "Well of course! They've got a tyrannical military dictatorship of oppressive Communists holding them in suppression!"

Oh? That there's a military dictatorship of Communists is unquestionably true. But as I say—if I were an average Vietnamese, I'd prefer that "suppression" to the tragic-opera coup and countercoup that the South Vietnamese have to try to live with.

Indo-China, under the French, was reasonably integrated and peaceful—because the French supplied the military dictatorship force to keep it that way. It fit the Vietnamese about the way a French *sabot*—the wooden shoe—would fit the barefoot peasants. But it did provide something stable and organized.

Remember that American consumers *wanted* "Fair Trade" laws that guaranteed the merchants would have to gouge them for inflated profits—because they wanted organization that freed them from having to make decisions and work out problems. That American workmen *want* unions, that take care of their problems, even when those unions are run by crooks who gouge them and steal half the union funds.

Under such a system, the people involved know who's gouging them, and the gougers give them, at least, some stability in return for a tolerable gouge.

Under our idealistic system that we've been imposing on South Viet Nam, we've given them a guarantee of no stability, and imposed on them a you-have-to-make-decisions plan.

And, very simply, *they don't want it.*

Incidentally, it's of interest that the ex-French colonies—and ex-Belgian, who have a very closely allied philosophy—around the world have shown a vastly greater degree of explosive turmoil, when returned to their own devices, than have the ex-British colonies.

It's interesting then to compare the British tradition of domestic self-discipline, of individual responsibility, with French traditions—as manifested, for example, in the Frenchman's approach to taxes. The French government gave up trying to get Frenchmen to be even remotely honest in reporting taxes, and uses a system whereby the tax collector bases the income tax as-

sessed against an individual on the outward manifestations of income. His income tax is based on an estimate of the value of his house, what kind of car(s) he drives, servants employed, his wardrobe, et cetera. What the tax-collector misses on misers, they make up on spendthrifts.

The British have a deeply implanted tradition of individual personal responsibility and law-abiding behavior.

Darned if it doesn't look like they succeeded in transplanting at least some of that in their colonies!

Viet Nam, being an ex-French colony, has a rather low index of respect for the central government and the honesty of bureaucracy—because the citizen considers it his right and sensible duty to cheat where he can. Naturally, he expects the same from the bureaucrat. If caught, he will, of course, pay up graciously; after all, it's the way the game is played.

On top of this is a layer of Communist indoctrination.

Under it is five thousand years of oriental-style feudalism, with virulent local-nationalism.

And we Know The Right Answers for these people?

All evidence indicates that what's needed is a strongly centralized military dictatorship, with a powerful and stable bureaucracy that is rigidly honest. (Enforced by death penalties, not slaps on the wrist and fines.) You don't get that

sort of rigid honesty, with enforcement that means en*force*ment, without a military system. A civilian system won't do it—and the Vietnamese won't have any trust-respect for a civilian system. (They had one for years; they know about those.)

It also requires a powerful, oppressive military dictatorship to make the Montagnards co-operate with the lowland farmers, and the demeaned and rejected fishermen, and the city people. The city-people don't respect those backwoodsmen, or the peasants-on-the-farms, or the smelly fishermen. The fisherman has no trust or respect for the landlubbers of any stripe. And, of course, the peasants know that all non-farmers are out to cheat him of his land, his produce, and his freedom.

These people *aren't Americans, with American traditions and experiences.* They're an alien people, with alien traditions—alien even to each other!—and a lifetime of experiences of a very different kind.

Democracy in Viet Nam? Don't be so stupid! In a culture-conglomerate wherein every group *knows* that there are only two possible situations—either you are Exploited or you are powerful and are an Exploiter? That's not Communist indoctrination—it's their life experience! Democracy? That means, to them, that the gang that gets the most votes has a right to destroy their rivals.

Remember the exact and literal interpretation of Democracy says it's "Rule by the majority." O.K.—and the Nazi majority in Germany passed laws that made killing Jews legal. That's Democracy in Action, bub—and don't forget it! You may forget it, and it may not be what *you* mean by Democracy in Action—but take a wide-open-eye-and-mind look at the Emerging Nations and how they practice Democracy in Action. Particularly the ex-French colonies, with a lower index of individual responsibility. Isn't that definition of Democracy In Action precisely what they've tended to try to put into action?

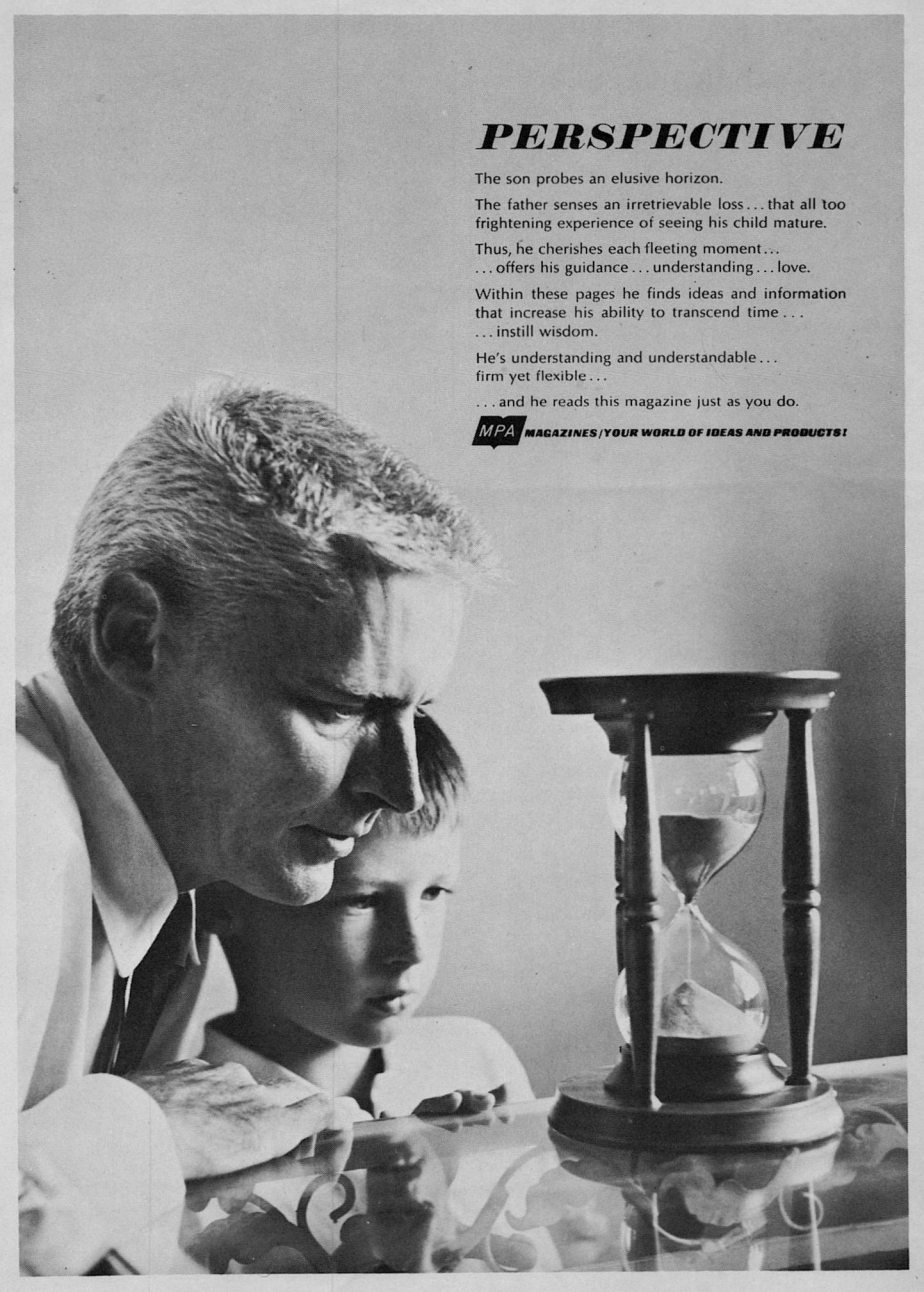
If you were an average Vietnamese, which would you prefer? Democracy In Action or Communism?

Sure, there are hundreds of alternative choices besides those two. But remember—if you were an average Vietnamese, you wouldn't know about those; those two you've had experience with.

The problem isn't American Imperialism.

But the problem of American Keeperism is very real. We know all the answers, we do. That's why we have no troubles of our own at home, and so can tell everybody else how they should be running their affairs. Even if those other people are very widely different from ourselves, because we know they aren't since All Men Are Equal.

The Editor.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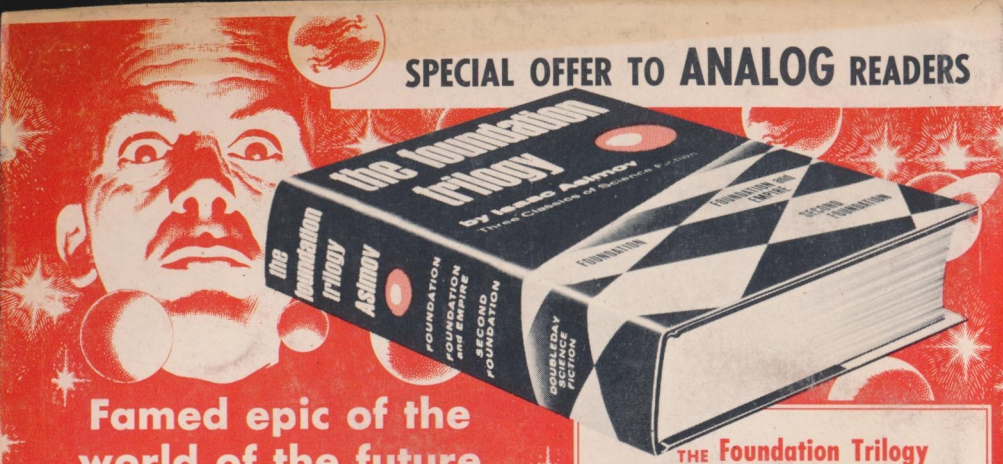

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