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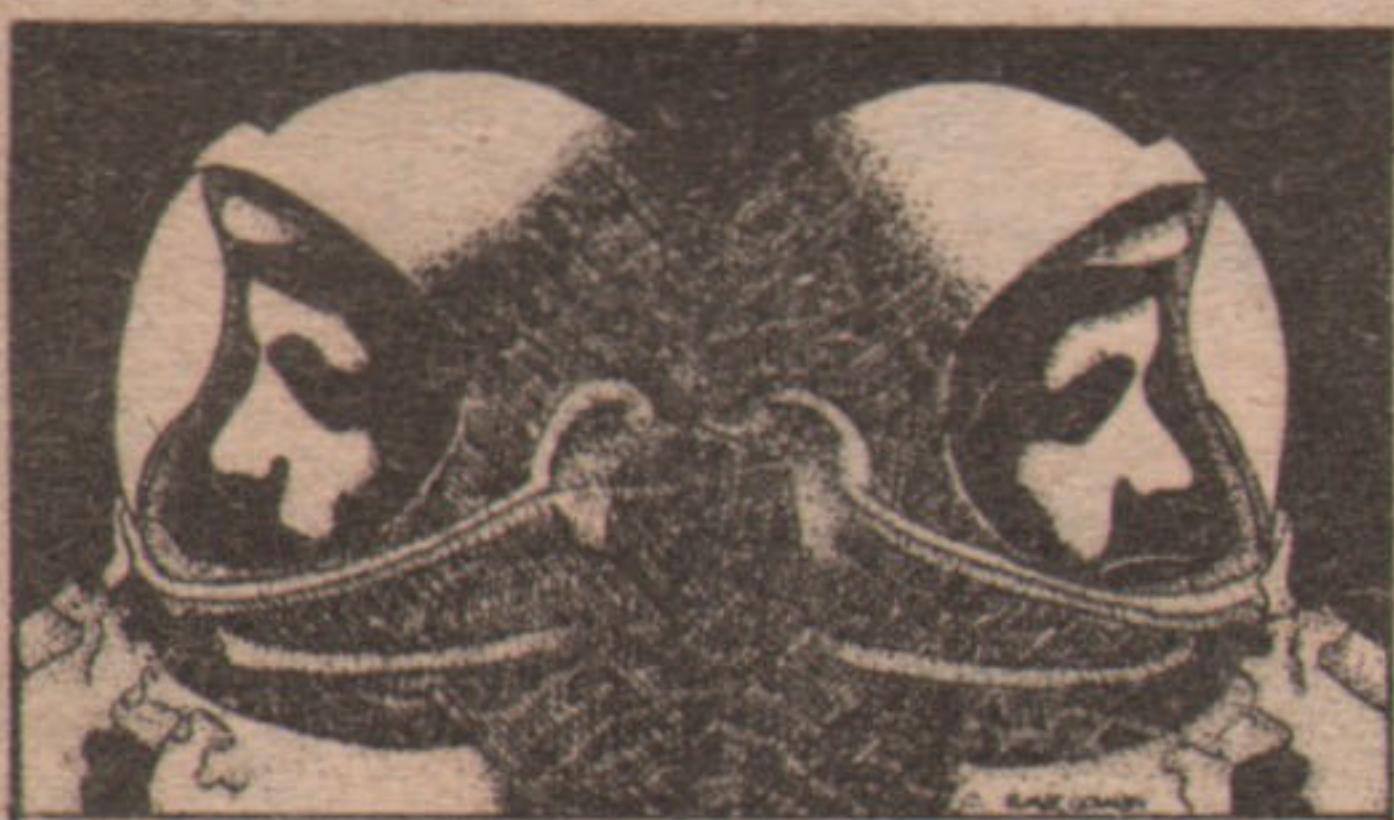
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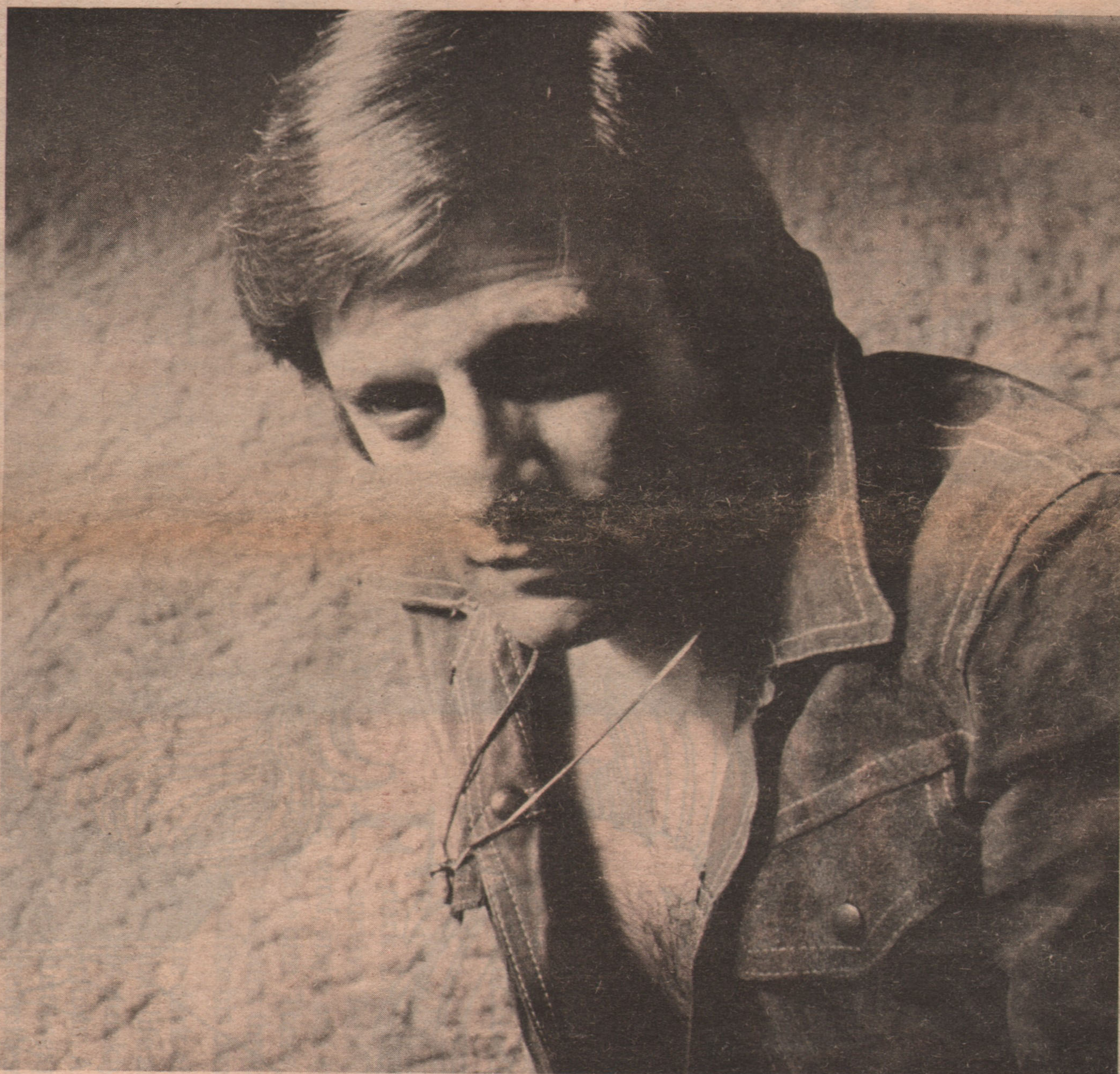
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IN FEAR OF K

"He who sleeps in continual noise is wakened by silence."

WILLIAM DEAN HOWELLS,
"Pordenone," Act IV

They had been in the pit as long as either could remember; they had discussed it many times; neither could think of a time when they had *not* been in the pit. They had, perhaps, been there forever. It didn't matter.

There was no way out.

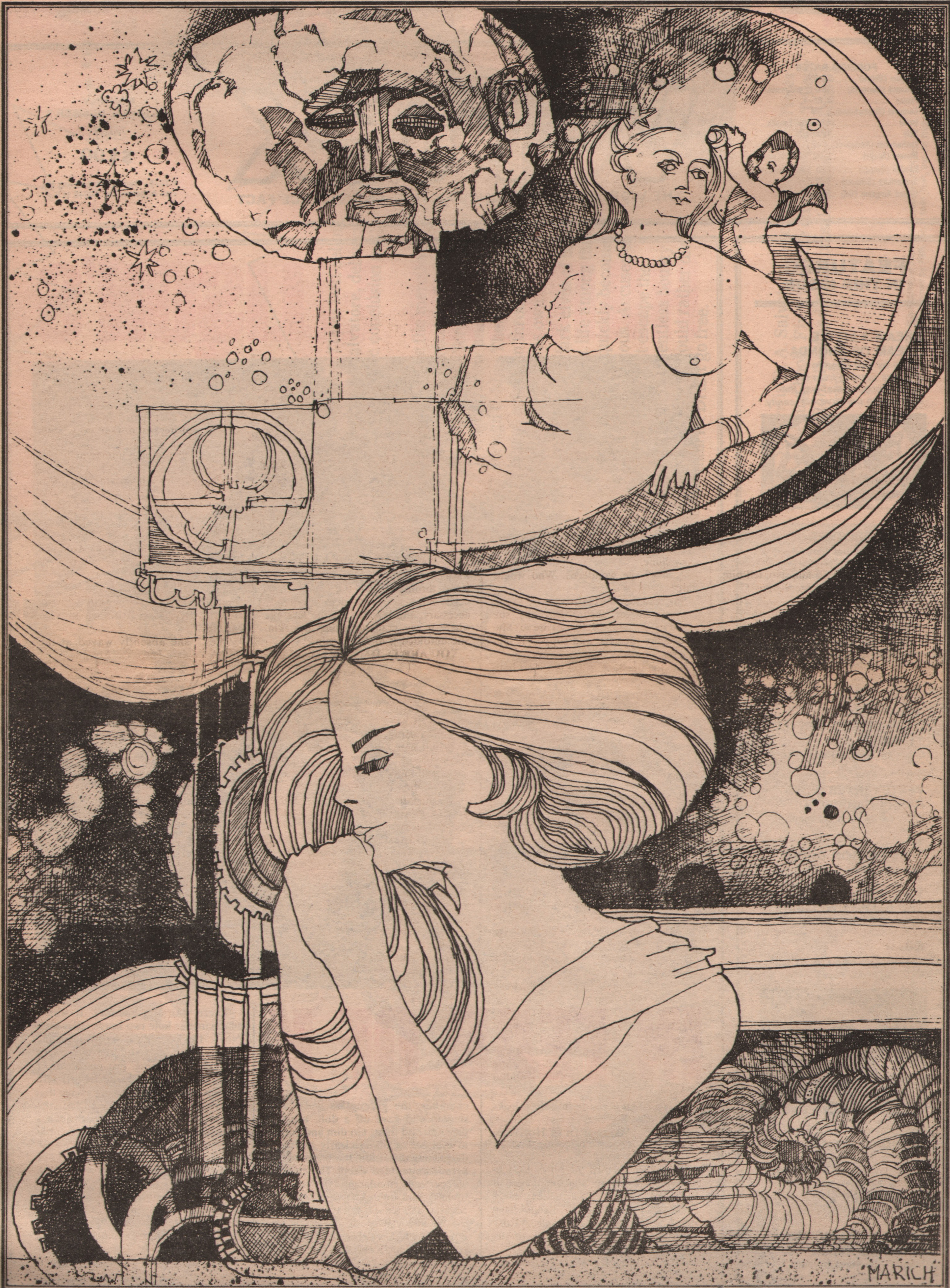
Where they lived, in the single

chamber, the greenglass walls were smooth and gave off a dull, constant, pale emerald light; too dim and corrupt to ever see anything clearly or free of disquieting distortion, too bright to ever permit untroubled sleep. The chamber was perfectly circular, and the walls rose up slick and unbroken until they vanished in darkness. If there was an opening far above it could neither be seen nor reached. They were two prisoners, condemned to live at the bottom of a well.

There was one opening. It was a semi-circular hole two heads taller than Noah. The opening looked out on the maze. If Claudia stepped two paces beyond the opening, just outside their living chamber, and looked to her left, she saw a dark rough-stone passage that followed the outside wall of the chamber. To her right was another, vanishing into darkness. Directly in front of her were seven more tunnels whose mouths were black and ominous. The ceiling above her was also rough dark stone with tiny flecks of brightness that might have been tin.

She had once ventured a few steps down the fourth of the seven tunnels, and two steps further it had branched in three directions. Clearly, what lay

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MARICH

She had found herself a world where her fondest dreams came true, and there was no way the little monster was going to bring her back.

Dream A Little Dream of Rhonda

fiction/Neil Shapiro artist/Felix Marich

The mist of makeup was a cooling lotion of a billion bubbles. It gently changed her morning paleness into a soft and roseate, afternoon glow. She preened luxuriously in front of the sprayer valve, opening her pores, and her soul, to the sweetly scented, golden cloud.

Her house servant, a model 33-A manufactured on the industrial world of Jarma Nine, entered her boudoir on silently rotating, padded treads.

"Madam," it announced in its crystal fine tones, "the Count awaits you." It hummed softly to itself as interior motors automatically idled.

"The Count," she breathed in deeply of the floral scented mist, "is a bore." Still, she thought to herself, she had promised to see him.

"Madam," the 33-A inquired, "shall I inform him that his audience has been cancelled?"

"Poor Antoine," she shook her head, "such news might kill him. No, tell him I will be with him immediately. Then, check back with me here in another half an hour." The model 33-A wheeled about and left for the parlor sitting room.

She giggled, picturing the Count's delicate form pacing back and forth in the parlor as if it were a thin sapling swaying in the breeze. She stepped out of the makeup mist and shivered as the layer of bubbles all burst, flowed together, and dried into a perfect, all-over complexion.

She switched off the mist and flicked on the holomirror. The three-dimensional image, which she fondly thought of as 'my little twin sister', formed in front of her. She raised her well turned arm, the image raised its own. She pirouetted and the image turned around and around. She paused to study the image and was pleased with how the makeup tone had succeeded in blending so nicely with her own, natural colorations.

She turned another control knob. The image flickered, reappeared dressed in a gauzy creation of pink lace which accentuated the rosiness of her much revealed skin.

Oh, no, she thought. Not for Antoine. He would be speechless, and his voice is his best quality.

She turned the knob again.

The image was, this time, dressed in a gown of sequined wonder. She smiled and reached out to press an enameled button. The image faded and, in its place, the newly synthesized gown rose from out of the floor, hung on a silver rod.

"Your Ladyship," the model 33-A entered as she was dressing, "it has been an half hour. Also, a message has arrived on the pulse/wave frequencies." It held out to her a sheet of flimsy plastipaper, clutched in its delicately machined paw.

She finished dressing in the gown, then took the message from the patient robot. She unfolded the thin plastic and read it rapidly. It was very short, abruptly worded. It brought a chill of fear to travel the bumpy road along her



silky spine.

A joke? she wondered. Who would dare?

She read the short missive once again. It was senseless, absurd. But why, she asked herself, should it upset me so? She folded the message and slipped it into her bodice.

She led the 33-A down the short hallway to the parlor. The servile machine held the red draperies aside for her, and announced her presence to the Count.

Count Antoine of the Outermost Stars knelt and pressed her hand gently to his moist, full lips.

"Lady Rhonda," he said to her, in his carefully cultured voice, "you are ravishing."

She smiled. "Your opinion is most refreshing." She seated herself gracefully on the low couch and motioned the Count to join her there.

"Your people, Count," she asked, politely enough, "how do they fare?"

As if it had a life of its own, the Count's thin hand stole across the velvet couch to cover her own hand. She suffered the liberty.

"My Lady," the Count said, his eyes hooded with desire, "my people lack for nothing, but for a Countess to sit beside me on the Opal Throne."

"Well, then, how nice that they have so handsome a ruler. The throne beside you cannot remain vacant for long, I'm sure." She gently freed her hand from his light grip.

The model 33-A rolled into the room. Lady Rhonda wavered in her feeling between thankfulness at the interruption and annoyance.

"Yes?" she asked the machine.

"Doctor Leibowitz has arrived to speak with you." The 33-A's voice, as always was delicately restrained, especially for a machine.

"I know of no such person," Rhonda decided she was now more annoyed than thankful.

"He said you were expecting him," the machine vibrated on its treads. "I detected no rise in heartbeat, pulse, or any other somatic indicator of falsehood."

"Just a moment," something about the

name was vaguely familiar, though she wasn't sure why. Then, she recalled. She stood, turning so that the Count's eyes need bulge no more than absolutely necessary, and reached for the message where it was cradled against her skin. She unfolded it to read again.

YOU ARE IN DANGER. UNPLUG.

*Yours Truly,
Dr. Leibowitz*

"My Lady," the Count stood with a swirling of his cape, "may I deal with the interloper for you?" His thinly boned hand fell onto the jeweled pommel of his strictly ornamental rapier.

"I don't think that will be called for," Lady Rhonda drily replied.

Abashed, the Count reseated himself. Though he still kept his hand near the ceremonial sword.

The draperies covering the entranceway were suddenly swept aside. A short gentleman with ruddy cheeks on either side of a round face stood in the doorway. He was wearing a light green gown and rubber gloves were pulled up past his elbow.

The intruder seated himself on the low couch. The Count moved gingerly away.

"Dr. Leibowitz?" Rhonda asked, keeping her temper by the greatest of will power.

"Of course," the man crossed his ample legs, "who else were you expecting?"

She could only stare dumbfounded, at a loss for words. She could not remember any other display of such poor manners.

"Well, Rhonda," the doctor rubbed his gloved hands together, "this is the way it is. You're dreaming and it's time to wake up. Be a good girl about it and unplug right away."

"Dreaming?" Rhonda looked at him. She was so amazed she hardly cared that her emotion was coloring her face. "How could I be dreaming all of this?"

"Ah, ha!" The Doctor smiled as if he had already won the debate. "You hear your own words? You don't ask me how I could say anything as crazy as that. Instead, you ask me for proof. Subcon-

sciously, even your own libido is tiring of constant wish-fulfillment."

Rhonda suddenly felt a weakness in her knees. Dizzy, she seated herself on the parlor's other couch.

"According to our files," the doctor said, producing a thick manilla folder from the folds of his gown, "you locked yourself in your Dream Master about a week ago, give or take a few hours." He sighed, "Usually the sales department will weed out prospective buyers of your type—no offense intended." He smiled, showing two rows of even white teeth. "At any rate, this is only your first offense. If you unplug immediately you might even be allowed to keep the Master. Though, you will have to use it under the guidance of a company dream governor in the future."

"My Lady," the Count stood, "I have heard more than enough. On guard, villain." He drew the rapier from the scabbard with a swishing of chromed metal.

"My dear," the doctor asked Rhonda, while he favored the Count with an annoyed expression, "can't we do without him?"

"Yes," she absently waved at the Count, "please leave us, Antoine."

"But, my Lady," the Count began. The sentence remained unfinished as the aristocrat suddenly vanished, like colored smoke, into the air.

"What?" Rhonda's hand went to her mouth.

"A healthy sign," the doctor assured her. "You're beginning to break down your fantasies, disassembling them back to your basic reality framework. Now, if you would only completely unplug, we'd have no further problems."

Rhonda fingered the soft fabric of her gown, nervously running her hand along the sequined patterns. "How dare you barge in here like this?" she demanded, in an attempt to regain her composure. She tried not to look at the area the Count had once occupied.

"Well," the doctor admitted, "if it was up to me, I wouldn't bother. I'd let you stay in your Dream Master until you starved to death, which, by the way, would only take another week or so. But," he shrugged his ample shoulders. "Lete Incorporated has an image of safety to maintain. Last time this happened, sales dropped nearly thirty percent. Come on, be a good girl. Unplug for me."

"If everything is a dream," Rhonda said excitedly, realizing she had spotted a flaw, "how about you?"

"Me?" The Doctor laughed. "I'm as real as any underpaid employee anywhere. You see, for God knows what reason, you won't come out of your Dream Master. You've barricaded the door from the inside, so we can't even come and get you. However, never fear, where there's a will and an upset public relations department, there's a way."

"I can imagine," Rhonda said, inwardly wondering how she could get rid of the man. He was obviously unbalanced. She doubted if a socially accept-

able hint to the man would have any effect at all. Perhaps she would be forced to try more direct means.

"You see," the doctor continued, "a system was worked out whereby my own psychic signals could be interjected into the input mixer of your Dream Master. Admittedly," he motioned vaguely with his gloved hands, "that explanation leaves something to be desired; clarity, for instance. Actually, back in our primary reality, I am occupying a couch just beyond the walls of your Dream Master. The circuitry has been rerouted into a two-way linkage; not only may I take part in your electronically enhanced dreaming, your dream imagery can be, to some extent, affected by my own manipulation of it. In other words, you and I are fellow dreamers. Of course, only one of us wants the dream to go on."

"I don't believe you," Rhonda said. But, inwardly, she found herself thinking: If I locked myself in the Dream Master, I must have had a good reason.

"I can tell you believe me," the doctor said. "Look," he pointed to where the room's walls flickered in and out of existence, "you're breaking through."

"Not true," Rhonda said, trying to hide her sudden nervousness. "I don't believe you at all. But, for the sake of argument, why would I want to stay inside my—what did you call it?—my Dream Master?"

"Why else, but to escape from reality?" the doctor laughed his abrupt laughter.

"Then, my reality is all that bad?"

"I can't say," the doctor told her. "But, I assure you that Lethe Inc. will supply you with free psychiatric help, as soon as you unplug."

Rhonda called frantically to the model 33-A. It trundled to her side. She pointed at Doctor Leibowitz.

"Throw that man out," she ordered. The robot wheeled to the doctor and extruded two long, metal tentacles. The tentacles passed through the doctor's flesh as if he were a wraith. The machine wavered back and forth on uncertain treads and then, like the Count had, vanished into thin air.

Rhonda's eyes widened so much that the flesh of the epicanthic folds hurt her. It was all too much for her. She sank to her knees. The room dissolved.

The doctor smiled.

She screamed and screamed. Then, with a conscious effort powered by a great will, she—unplugged.

Her head was cradled in what felt like soft down, pressing gently against her forehead, temples and eyelids. A gentle vibration came from all around her.

"I'm blind," she mumbled, as she futilely tried to open her eyes under the restraining siftness. No, she realized. I just can't open my eyes. Or sit up. Or roll over. Or wriggle my arms and legs. Move at all.

The padded helmet she wore swung up on massive gimbals to hang overhead. On its curved side was a bronze plate. Engraved on it were words which read, 'Manufactured by Lethe Inc.'

As she was reading that plaque, the restraint straps automatically opened and freed her. She swung her legs over the metal side of the cot and stood up. She was in a tiny, closet-like room. The room was featureless but for the cot and the metal helmet overhead.

Her stomach tied itself into a hundred different knots. The peristaltic convulsions finally ceased and became a constant, dull aching hunger.

Even the terrible hunger was secondary to a raging thirst. She coughed and

her throat was dry and raspy.

She stumbled across the small room to the door. A chair and an iron bar had been placed against it. With some effort, she moved the items aside. She reached for the latch on the door.

She paused. Maybe, she thought, I don't want to go back out there.

Another spasm of cramps caused her to place her hand back on the latch. She had to eat. She had to drink. She opened the door.

The light from the outer room was dazzling in its bright intensity. She tried to speak, but the words jammed like logs in the dried out stream of her throat.

She fell weakly forward. She lost consciousness even as gentle hands caught her and lowered her carefully to the cushioned floor.

She awoke gratefully from a rosy fog. Someone was feeding her by spooning dollops of warming broth into her mouth. She swallowed by reflex. She opened her eyes.

"Shush," the girl feeding her said, "don't talk, yet."

Rhonda obeyed, gratefully gulping down the warming bouillion as fast as the girl would spoon it to her. As she ate, she looked about the place, trying to place it in her memory.

The high ceiling was supported by enormous white pillars of marble. Statues stood in shadowed niches. Rhonda studied the subject matter of one of those sculptures. She blushed and coughed, spluttering soup all over herself. The girl smiled and towed her dry.

In the middle of the room was a large fountain, formed out of an translucent crystal. Lights along the fountain's edges turned the water into cascading colors.

About the pool, a dozen or more young women reclined on thick, velvet cushions like the one which propped up Rhonda's head. All the women, including the one who fed Rhonda, were dressed in colorful, flowing fabrics which, almost transparently, revealed the curvaceous figures beneath.

Rhonda would have laughed but, glancing down at herself, saw that she wore a similar garb.

The sound of a deep throated bell rang hollowly through the pillared hall.

"You're lucky," the girl said, as she put aside the bowl of soup, "you won't be bawled out until tomorrow."

She didn't really care what was happening to her body, so long as her mind continued to live in such a beautiful dream.

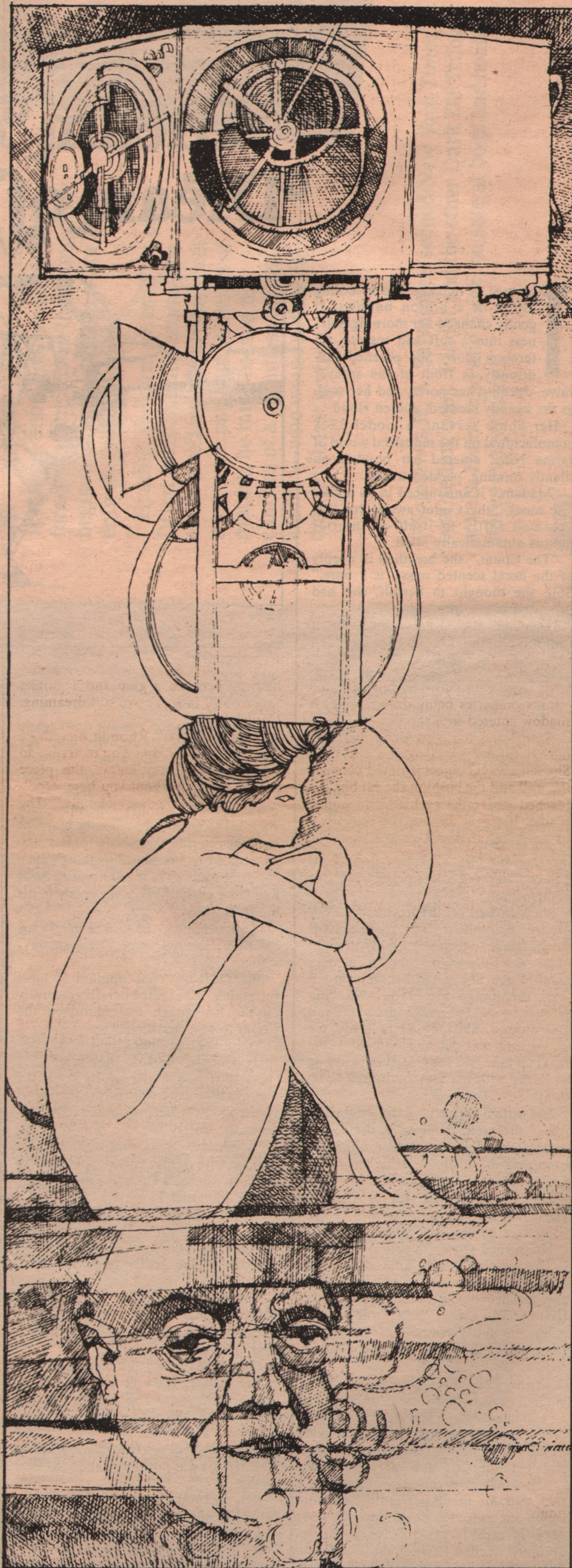
She helped Rhonda to her feet. The room swayed back and forth as if it were on rollers. The girl steadied her, she had a surprisingly strong grip for a person of such delicate build.

Rhonda allowed herself to be led across the room. The other women called out greetings to her. She nodded her head to each one, though she recognized no one at all.

The girl raised the curtain of an alcove and motioned for Rhonda to enter. She did so, and gratefully lay down on the cushions scattered on the floor of the niche. The other girl smiled, dropped the curtain back into place, and left Rhonda alone.

Rhonda could hear the fountain waters splashing outside the alcove. She heard the laughter of the women as they each retired to their niches.

She closed her eyes just as the lights dimmed. She could summon no memo-



ries of this strange place. Did that mean, she asked herself, that her mind was suppressing those memories?

Perhaps, she had sought escape through the Dream Master for a good reason. Maybe, she thought, it can't be remembered because it's so terrible.

The light continued to dim until the room, and her niche, were all in darkness. Tired as she was, she fell asleep nearly at once.

The heavy movements beside her awakened her. At first, she thought she was dreaming. But, when she felt the strong hands intimately caressing her, she knew it was really happening.

She screamed and, in the darkness, tried to scurry away. She was caught and held, none too gently. One large hand clamped itself over her mouth. She felt the diaphonous clothing ripped from her body. She could not scream again. She could hardly breathe.

There was nothing she could do against her assailant. She couldn't even see him. In a little while, he left her.

She sobbed to herself and clutched at her ruined, tattered garment. She felt spiritually drained, emptied and defiled.

No wonder she had locked herself into the Dream Master. It had been a mistake to unplug. She should have starved to death, instead.

She closed her eyes and tried to picture the palace on Altair Four, the Count, the model 33-A. It had been safe there, secure. What matter that it had not been real?

Reality was a spiteful thing.

She huddled in the corner of her alcove. Once more, she heard the soft, but crinkly draperies being drawn aside. A shadow entered into the niche.

Again? she thought, anguished. She moved further back, against the wall. She felt a metal object jammed between the wall and the cushion she sat on. She reached under the cushion and pulled it free. It was a dagger, she could feel its finely serrated and curved blade.

She heard the breathing of the other person coming closer. She clutched the handle of the knife.

"Rhonda?" the shadow called. "Is it you? I can barely see." The light grew a fraction brighter. "Ah, yes, that's a bit better."

Doctor Leibowitz faced her on his hands and knees, squinting at her myopically.

"Hello," the doctor said. He glanced at her unclothed figure and, with a visible effort, looked away.

"Don't come any closer," she warned him, showing him the dagger.

The doctor shuddered, a deep quivering shudder that caused the loose flesh of his body to shake and vibrate.

"You have to unplug," he said. There was no doubt of it, he was staring at her unclothed body. He licked his lips nervously. "Things are going too far," he said to her, moving closer as he spoke.

"Don't do that," Rhonda gasped as she felt her rubber gloved hand on her wrist.

"I can't help it," the doctor panted. His voice was strained and forced. "It's all your fault, you know," he said, as he slid his hand to her thigh. She shivered at the touch of the soft gloves.

"Don't do it," she whispered, holding tightly to the handle of the dagger.

"I don't know how you've done it," the doctor said, his corpulent face beaded with sweat, "but I can't manipulate the circuitry any longer. Or break out of it, either. Perhaps," he mused, as he continued his caressing, "your continued proximity to the output has set up a feedback, oscillation, amplification, psychosis, neurosis," he spoke the words tumbling one over the next.

"No," he shook his head, "my name is Steven Leibowitz. I hold a Ph.D. in Psychoengineering. I am in complete control of any dream sequence I monitor. I am not going to lose that control. My duty, my mission, my, my, my desire. . . ."

He toppled himself forward. His arms went about her shoulders and his weight brought them both sprawling on the cushions.

"Get away," Rhonda screamed at him, "get away from me."

"I can't help it," the doctor yelled back at her, his hands reaching for her flesh. "Oh, you're sick. You are one sick girl."

She moved so that the dagger was between them. She pushed and felt it sink into his body. He fell back, gasping for air. The hilt of the dagger protruded from his chest like a black tulip on a field of hospital green.

Rhonda turned away, unwilling to look at the bloody scene. Dizziness and nausea threatened to overwhelm her.

"At the very least," Doctor Leibowitz said, "you might let me die."

"Die," Rhonda said, "I'm not stopping you."

"Oh, but you are," he disagreed, staring at the hilt protruding from over his heart. His face was lined with pain, sweat beaded his brow.

Rhonda crawled past him to the draped opening.

"Where are you going?" The doctor's voice was shaking with pain.

"Back to the Dream Master," Rhonda told him. "I never should have left it."

"Fool," the doctor laughed, a sound halfway between a gasp and a gurgle, "you're still in it. You're still dreaming. Unplug."

"You're lying," Rhonda hissed. "I don't know why, but you're trying to scare me. God only knows, this place is bad enough without you here, too."

"This is not reality, Rhonda." The doctor leaned back against the wall and gestured at the protruding knife hilt, "I'm doing a lot of talking for a dead man," he said laconically. He smiled, but the effect was ruined by a trickle of blood from between his lips. "Least you could do," he said, "is to stop dreaming the details."

"According to you," she said, "you're the only real thing around. If I'm not dreaming you, then leave."

"I'd love to," Doctor Leibowitz said. "But, you're too strong for me. I'm being pulled along with you. I can't break free. You have to unplug right away, before it's too late."

Suddenly, the curtained entrance opened again, this time to admit a huge man who was dressed only in a large, flopping loincloth. He was completely hairless. Strapped to his side was a sharp, curved scimitar.

The man saw Doctor Leibowitz propped up against the wall. He shouted a startled exclamation, hurriedly unstrapped his sword and brandishing it overhead, he rushed at the wounded doctor.

The doctor looked up at the advancing apparition. The swordsman's body had been lightly oiled and the diffused light played off his shining muscles.

"Oh, no," the doctor gasped out, hopelessly, "you've even dreamed yourself a eunuch. That's just too. . . ."

The doctor was rudely interrupted as the sword swung down in a swift arc and lopped his head neatly off. The head bounded into the air, fell onto the floor, and rolled off into a corner. The decapitated trunk fountained crimson and jerked spasmodically.

The eunuch carefully wiped his blade clean. He strapped it back at his side. He smiled once at Rhonda and then took

the corpse by the feet and dragged it with him out of the alcove.

Alone, Rhonda gingerly touched the still wet pool of blood. She wiped her hand on a dry floor cushion. Sickness rose in her throat.

She fell against the wall and gently lowered herself to the floor. A round object pressed lightly against her leg.

She looked down into Doctor Leibowitz's pleading eyes. His mouth worked silently, cut off from the vocal chords and the airpower of the lungs. His eyes blinked up at her. Tears rolled down his fat cheeks and dripped off the stump end of his neck.

Rhonda screamed . . . and, unplugged.

The shock of awakening finally passed and Rhonda was able to walk to the door of the Dream Master to unblock and open it. She turned the handle, but paused before allowing the door to swing inwards and open.

What, she wondered, waited outside for her this time?

What, she asked herself, could be so terrible about her real life that even a degrading existence in a harem had seemed preferable to her subconscious mind? Her hand shook with nervous tension and her palm was moist with fright. She braced herself for any shock, physical or mental, and swung open the Dream Master door.

She stepped over the threshold and into the kitchen.

Bright sunlight streamed through the cafe curtains which were splattered in a flowery design. The chrome and white enamel of the appliances gleamed like beckoning angels.

She stumbled across the room to the refrigerator and opened the door. She rummaged through its shelves. At first, she was tempted to set out a gargantuan feast. She seemed to recall having once read that, after a long period of hunger, a small meal was best. Her stomach cramps tended to make her agree with that. She settled on taking out just one can of juice and a cardboard container of milk.

She set the liquids down on the dinette table. On the shelf, next to the refrigerator, was a box of breakfast cereal. She paused, then decided that it would be light enough not to do her digestion any

buds and helped her mind out of the mental fog it was in.

Memories flooded back. She glanced at the clock above the stove. Don had bought it for her on his last business trip to the Coast, it was one of the new digital displays. Don would be, she looked once more at the clock, home in five hours and the apartment was probably a mess.

She glanced longingly at the milk and cereal. First, she decided, she had better get a start on straightening the place up.

The livingroom was neat and clean, but for a pile of books. She picked up the books to carry them to the bookcase. She set them in their places.

Next to the case, the wall was covered with an eclectic collection of paintings. It had been an experiment in interior decor, the juxtapositioning of different styles, periods, and mediums. Many of the paintings and prints were quite good. The overall effect made up for a few questionable ones where the artist's inspiration had overstepped his technique.

One painting in particular caught her eye. In the middle of the scene a circular, crystal fountain bubbled and streamed. In the background, a series of curtained alcoves was guarded by a fierce eunuch.

She stared at it. Then, she laughed. Surprising, she said to herself, what the subconscious will pick up and store.

She placed a few magazines back in the rack. Her husband collected the old pulps, though she had always told Don that the crumbling, brownish paper got all over things. On the cover of one was an aristocratic looking girl dressed in futuristic garb. A small robot was by her side.

She laughed again. Her housework done, she went back into the kitchen. She seated herself at the table.

Don, she thought as she seated herself, would understand about the Dream Master. They'd just have to get rid of it. The ads said it was safe. Well, they'd either refund the money or face a lawsuit, that was for sure.

"Idiotic fool!"

The shout startled her so that she dropped the unopened quart of milk. It rolled off the table and broke open, spilling its contents in a white river on the floor.

The voice was a voice out of her dream, the voice of Doctor Leibowitz. She looked wildly about the kitchen, but



The doctor was hounding her across the dreamscape, and one way or another, she was going to stop him!

harm. She sat that down next to the milk.

She brought down a glass and bowl from the upper cupboard. She got the silverware out and set the table.

She sighed. She was home.

She poured herself a glass of the juice. The acidic tang of it cleared her taste-

he was nowhere in sight. She ran into the livingroom.

"No," he shouted to her, "back in here."

She walked warily back into the kitchen.

"What do you want?" she called out, glancing futilely around and wondering where he was hiding. "Where are you?"

The voice ignored her questions. It went on, in pedantic tones, "While your case may not be unique it is unusually severe. I think Lethe Inc. will not have

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His country wanted him to do one thing, his service another, and his church still a third. And none fit in with his own plans.

LITTLE BROTHER

fiction / FLETCHER STEWART
artist / RODGER MACGOWAN

I

It had been a hard day for Norman Lennox. To begin with, he had just returned from his regular visit to the Russian space platform, *Oasis*, which was on Moscow time, whereas all installations of the Eur-Am Space Agency (EASA) were on Mid-Atlantic Time. As Chaplain, Lennox was the only person who regularly commuted between the two systems; it was always a bad day readjusting from one system to the other.

He arrived at Earth Orbital Station 1 to find that it was early morning in the middle of the Atlantic. There were only five people waiting for him to share the Eucharist. That isn't bad out of a total population of two dozen; it isn't very good, either; what it is, is depressing. From one point of view, Norman Lennox was pastor of the world's remotest, most scattered, most under-populated parish: Earth's orbital sphere.

During the morning, the Encounter Group met; they were particularly bitchy.

Just before lunch, a death-notice arrived; by universal consent, if the Chaplain was on board, he handled such matters. ("After all, he has to do something.") Usually, the death of a parent was involved. This time, however, an aircraft crash had claimed the wife and daughter of one of the station's engineers.

Well, there is only one way to break bad news: break it. But you don't feel good about it afterwards. Lennox worked out some of his own feelings by helping the engineer pack his weight allowance for the shuttle trip down to Earth. The engineer was Moslem, which made verbal communication somewhat strained; but the non-verbal speaks more effectively at such times.

The shuttle came and went, taking the engineer with it.

"Is there a package for me?" inquired Lennox.

"No," the Storekeeper checked her list.

The Chaplain had been expecting a package of hymn books for three weeks. He sighed.

"Chaplain Lennox," said the intercom, "please report to the Administrator's office at once."

"What now?" the Chaplain asked no one in particular. Maybe it was something to do with his request for surface leave?

Administrator LeMieux was a precise little Frenchman who wore his hair in a neat bun.

"I'm afraid this is not a pleasant matter," he apologized as Lennox sat down. What else is new, thought Lennox. "You are going to have to sign this," continued LeMieux, sliding a piece of EASA stationery across the desk. Lennox began to read:

"In recent months, Canadian saboteurs have attacked a number of vital American scientific installations. The Council of the Eur-Am Space Agency is anxious that its cooperative installations should be protected from such a threat, especially during preparations for the Mars launch. Therefore, all EASA personnel of Canadian citizenship are required to sign the following declaration; failure to do so will terminate existing security clearances."

By this time, Lennox was boiling mad inside. The EASA Council was obviously being shoved around by the Americans. Sign or lose your job, he thought grimly. Just how important to him was it to stay in orbit?

I _____ (please print) regret and repudiate the violent acts of a misguided minority of my fellow-countrymen against the property and personnel of the

United States of America. I declare that I have no intention of engaging in such acts, and will endeavour to prevent such acts, should the occasion arise. I declare this in the spirit of cooperation amongst nations, and the common good of mankind, 'That the Earth may Survive' _____ (sign here)"

"This is no security measure," snapped Lennox, "it's a propaganda measure! They'll probably make posters out of it! How do they expect any of us to sign such drivel?"

LeMieux shrugged expansively.

"Perhaps they wish to test your priorities," he suggested. "You must not think that I approve of this, *mon père*. I sympathize with you entirely. You are being asked, in a subtle way, to sell out your country. I myself am deeply offended by such political interference in the affairs of EASA."

"But you have to do your job," added Lennox with mild sarcasm, remembering Pontius Pilate. What did the Administrator want—absolution?

And what did he, Lennox, want—crucifixion? Or a sensible compromise?

"Can I have time to think this over?" he asked.

"But of course."

He sat on his bed re-reading the document, gazing at the blue EASA insignia of a globe slashed with a steep chevron, and the P.R. slogan "Ut Terra Revivit—That the Earth may Survive." (It had won a slogan contest five years ago.)

The issue was, very briefly, that United States forces had intervened after a Canadian election had resulted in a minority socialist/nationalist government. The intervention was ostensibly at the request of the outgoing and still-incumbent government, to counter an ostensible communist coup. Canadian opinion was mixed, but a large guerrilla movement had resulted.

What made it particularly awkward for Lennox was that his brother was a guerrilla leader.

His choices were stark: abandon his job, a vocation that had rescued his floundering sense of calling; or be used in propaganda against a cause he sympathized with, and risk a deep rift with his family. He felt very much alone in his decision.

Should he call home? No, they would only see one side. He could explain to them later. If he had to. He pictured them, their reactions. Dad. Mum. Jim. How could he possibly sign?

But how could he abandon his orbital parish? His involvement in these few dozen lives was real and concrete, while at the same time placing him close

to what he felt was the leading edge of human endeavour. Should he sacrifice that for a symbolic gesture of national loyalty?

It occurred to him to pray about it.

Nothing seemed any easier. The drift of his thoughts was in the direction of vocational loyalty: when the political boundaries had been swallowed up in Armageddon, what would survive were the intimate human gestures, the cup of water given to your little brother.

A tap on the door. "Message for you."

It was from the Moslem engineer:

"Thanks for being there. Allah is gracious and merciful. Said."

Lennox picked up his pen, and slowly signed his name, adding under it: "So help me God."

It was with a certain air of defiance that he handed the document to LeMieux, who regarded the Chaplain quizzically, as if Pilate should disapprove of Barabbas for taking advantage of his pardon.

"I'm not signing away my country," explained Lennox defensively. "I am making a pragmatic and provisional statement, and placing the ultimate issue in the hands of God."

"Ah!" LeMieux' eyes lit up with comprehension. "That is why you added to your signature, eh? You must have been trained by the Jesuits."

"I'm more of a Franciscan."

"But the point is obscure, don't you think? It may be clear between you and God, but it will not be clear to anyone else. Everyone will *think* you are a collaborator. Against your will, you will be used to undermine the self-confidence of your people."

"Administrator," bristled Lennox, "you are not the one who had to make the decision. You are the one who forced me to make it. You are in a poor position to criticize."

"I'm sorry, *mon père*. It is my own uneasiness coming out, I suppose."

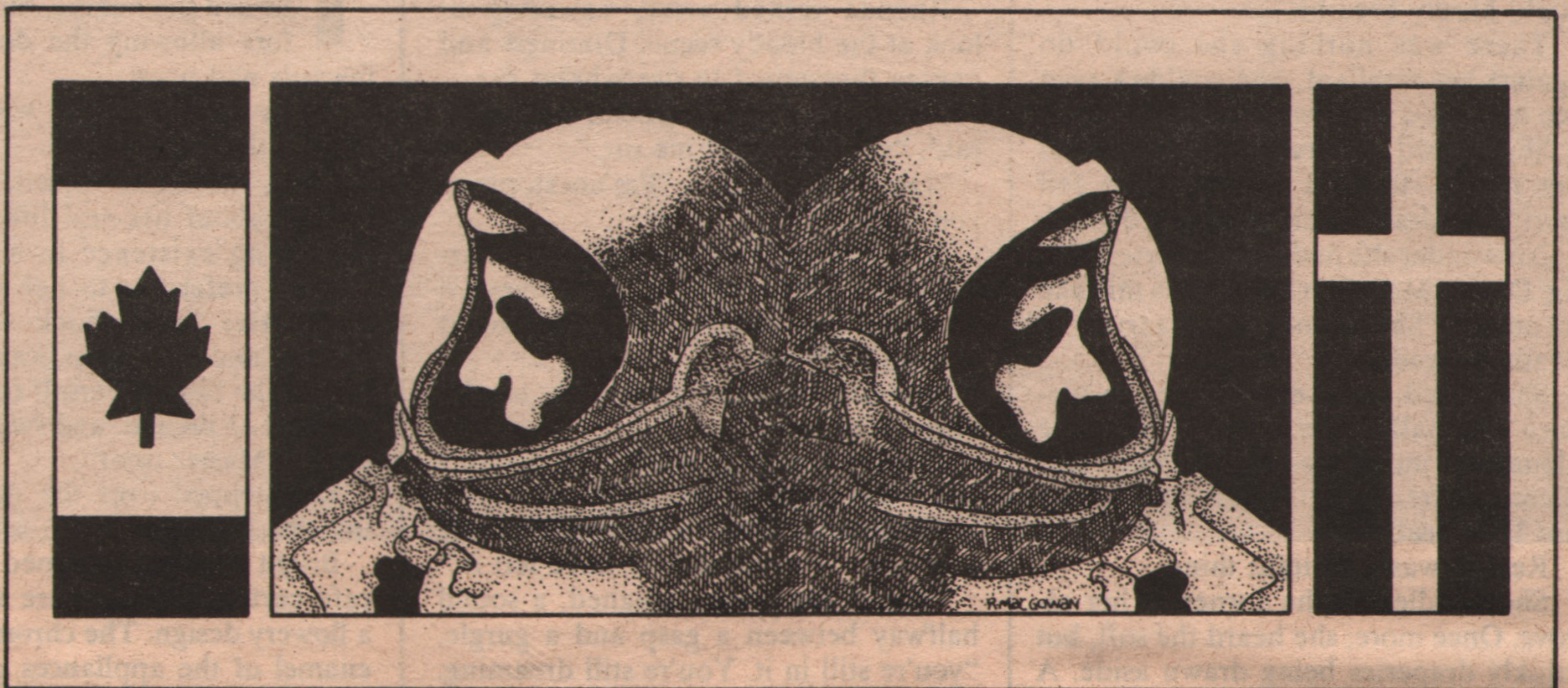
Lennox relaxed. "I'm sorry too. There is basically only one way to make a difficult decision: Make it and abide by it. My place is here."

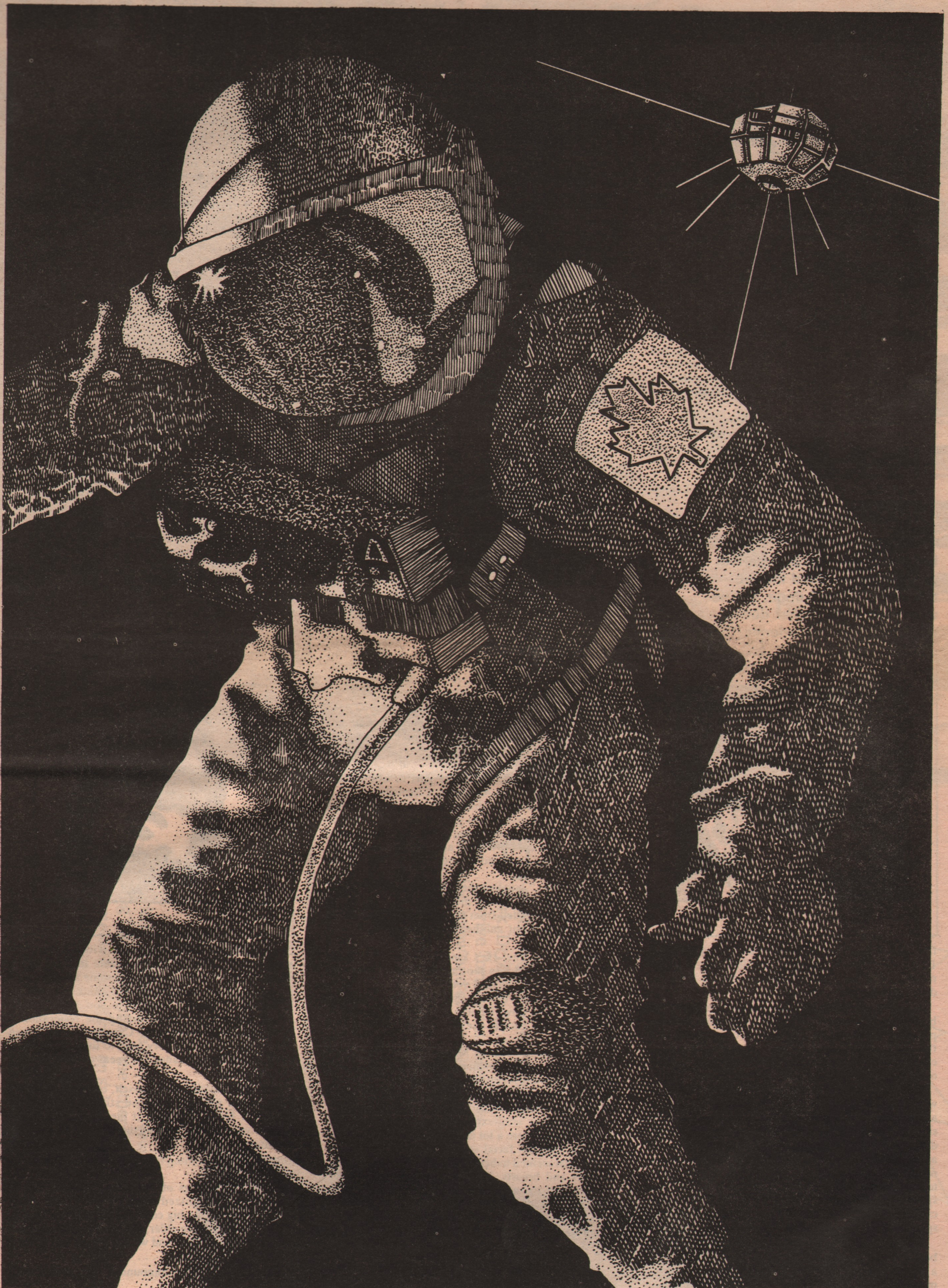
"Of course, of course. That reminds me! Your surface leave is arranged. You go down on next Wednesday's shuttle."

"Oh; thanks." The prospect of facing Earth was not so enjoyable any more. Still disoriented by Moscow time, he asked, "What is today, anyway?"

"Thursday."

A tough day. But in its way, not a bad day.





II

Hullo, Padre," piped up the airlock attendant. "Going on leave?" She started weighing his kit. "Yeh," nodded Lennox. "I'm about due!" "Too bad about this TV coverage you're getting. It won't make going home to Canada very easy for you chaps just now."

"I guess nobody thought of that," grated Lennox. His stomach was tied in knots, thinking about facing his family. "Well, tuck me in!"

He pulled himself, nearly weightless, into the cargo module. It was a cylindrical chamber, about six meters in diameter and twice that in length. The use of the detachable module made docking and cargo transfer much simpler in orbit. Recently, a large number of modules had been ferrying up components for the Mars expedition. Since return cargo was much lighter, many components remained in orbit to be used as components themselves in future orbital construction, and those which returned to Earth were quite empty.

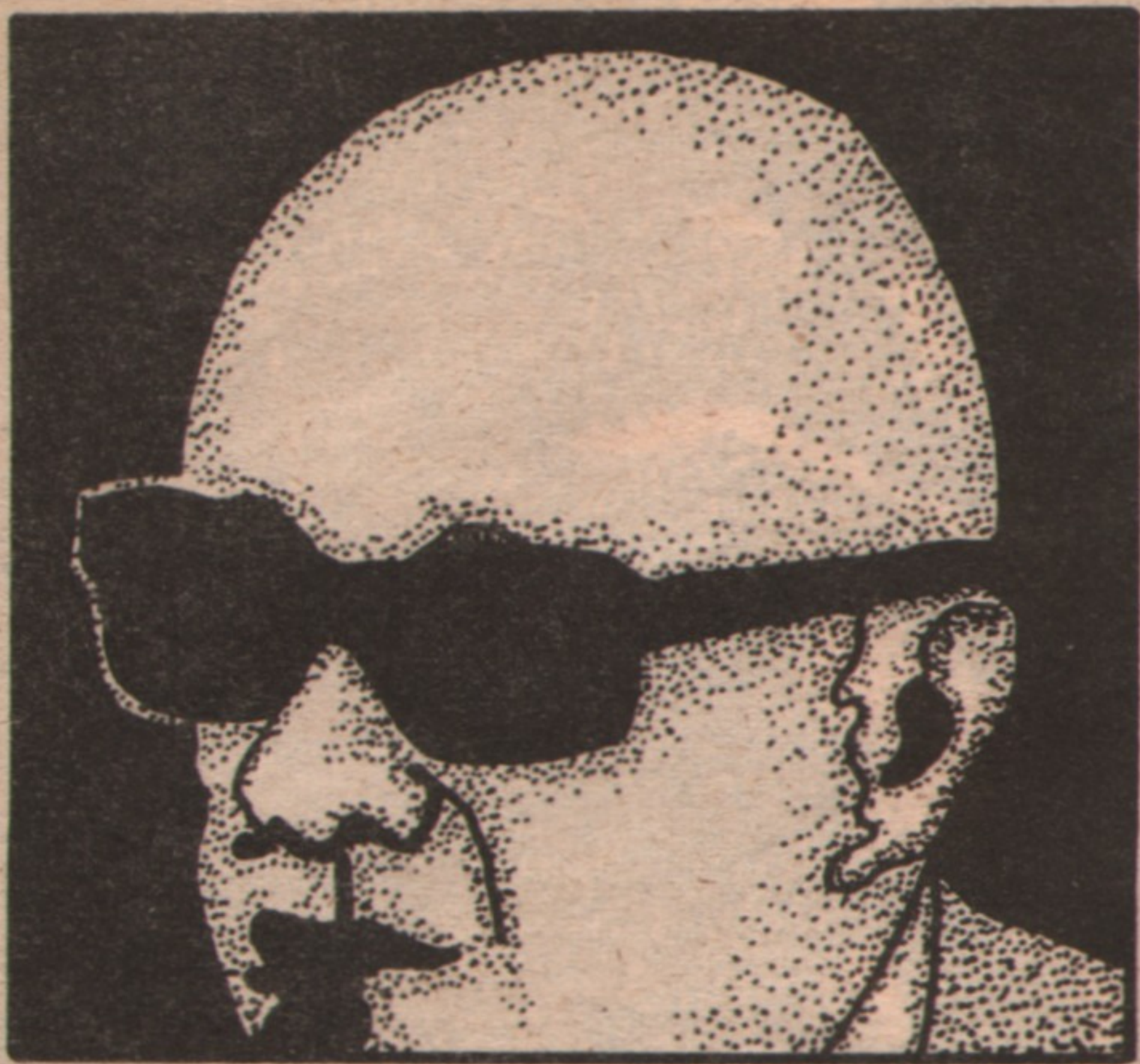
On this trip, the cargo consisted of two boxes of lunar ore and seven human beings: Swensen and Himmellmann, the video-famed lunar explorers, returning from their third TV special; Ramirez and Clark, one of the lunar shuttle crews, going on leave; Spazzi, Palmer and Lennox, orbital staff going on leave. They strapped themselves in, exchanging greetings.

"Dias, Padre!" grinned Juanita Ramirez, her dark beady eyes shining incongruously beneath her bristly crew-cut. "You hear the news? Robin and me made it in the final selection for the Mars team! You wanna come as Padre?"

"Might not be a bad idea, at that," replied Lennox sardonically.

The module's air-lock was sealed and uncoupled

His duties put him in a perfect position to carry out the job the rebels wanted done, but he wondered if his higher duties might not take precedence.



from the hub of the wheel-like Earth Orbital Station 1. Pre-set chemical charges cancelled the module's rotation, and modified its orbit so that it began to drift away from the station.

A dart-shaped shuttle came swinging up out of the blue and white disc of the Earth. Slowing as it approached the top of its trajectory, it opened up along the back and ejected a cargo module. Chemical charges boosted this second module into a parking orbit parallel to the station.

The shuttle continued in the parabolic curve which would take it back into the atmosphere at a sharp angle. Lines with grappling devices shot out from the sides of its receiving cavity. Two space-suited attendants on the Earth-bound module snared the grapples as they went by and started attaching them to clamps on the outside of the module. As the shuttle began to winch the module into its receiving cavity, the two spacemen launched themselves towards the other cargo module to begin docking procedures with the space station.

As the lines between the shuttle and the Earth-bound module drew tight, the passengers experienced a jolting sensation. The averaging of the shared momentum of the two objects modified their joint trajec-

tory towards a more shallow angle of entry into the air. The shuttle completed the docking of its new module, the heat-shields clamped down, and a final correction was made by the rockets to ensure the optimum angle of entry.

The skillful and precision-timed operation, eliminating the need to change orbit and dock the whole shuttle, added up to millions of dollars saved in fuel costs over a year.

"How did you like my latest special?" inquired Swensen, since no one had volunteered to tell him.

"Great!" replied one of the orbital staff. "It sure put Lunar Base 22 on the map. And that was some fine new scenery you shot."

That was all the encouragement the blond geologist needed to start expounding upon his exploits. His partner Himmellmann smiled faintly in the background. Swensen's heroic image and capacity for romanticizing his own activities were extremely important to EASA's P.R. department, but everyone knew who did the solid work that underlay the TV specials.

The shuttle glowed bumpily through the upper reaches of the atmosphere, imparting a gradual sense of returning weight to the passengers. The shuttle was a modified version of the American craft that had started this run about a decade before. It coasted down over layers of cloud at air-liner speeds, and glided in for a touch-down at Cape Kennedy.

Unsealed from the cargo module, Lennox was making his way to his locker after being duly processed, when a video-toting newsman accosted him with a microphone.

"You're Lennox, aren't you? The Canadian?"

"Yes?"

"Would you like to add anything to the statement you made denouncing the Canadian terrorists?"

"I do not denounce Canadian patriots," snapped Lennox. "I simply choose a different way to serve. I don't believe in violence. And," he knocked the microphone away from his face, "I don't believe in being badgered."

Detaching himself, he went and changed out of his orbital issue—not a uniform in the military sense, but as distinctive. He paused to decide whether to wear his clerical collar, and decided against it; he wanted to be inconspicuous.

Before he left the building, he received a video-call from Administration, double-checking his destination. "Say, Chaplain," added the personnel officer, "try to be more cooperative with the media, will you? We have to watch E.A.S.A.'s image, you know."

"If E.A.S.A. is worried about its image, it shouldn't allow itself to be dragged into North American politics," retorted Lennox.

"North America is where we have to worry about our image. After all, the major part of our budget and technology is still American, Chaplain."

"Well I'm fed up, so don't push me! I don't mind being cooperative, but you guys make me look like a sell-out. How am I supposed to face my family after you guys have used my name and face on the media? Just get off my back and let me enjoy my leave, will you?"

"O.K., O.K.," laughed the personnel officer. "Cool off, Chaplain, and have a nice time."

Lennox' face faded from the screen. The personnel officer punched out another code, and spoke to another face:

"He's on his way. He's kind of sore, too. I hope we haven't pushed him too far; that might not work out so good. Is he bugged yet?"

"Yeah, we went through his locker this morning. He's registering now. I don't think they should give guys like him a choice—they should just ground him for good."

Lennox had to wait at Miami for a flight north. He sat for a while watching people passing before him, saying goodbye, joyfully greeting, solitarily brisk. Clothing was characterized only by variety, and by the fact that almost every part of the body might be seen exposed or semi-exposed except the face. Attitudes to nudity were a lot more casual now than even a decade ago, but facial cover-ups had reached new heights that seemed to belie the easy frankness of loins, buttocks and breasts. Dark or silvered glasses were popular, and the new cosmasks were catching on: a second skin of latex imprinting the features of celebrities over the fat and bone of their fans; and there was always old-fashioned mascara and rouge and pancake, and false eyelashes and moustaches and wigs—and even false bald heads, made of the same electrostatic latex as the cosmasks, since the Unhairy look had caught on. There were still a few with bra-

zenly naked faces, in jeans and sweatshirts, and a tendency to hand out tracts. Lennox, his face and eyes unshielded from contact, accepted several tracts; he felt sorry for them.

He saw his face on a poster, with a blow-up of his signed statement and it stared at him reproachfully between a poster discouraging the use of appliances and another encouraging couples to have at least one child. He went for a snack of Chinese food, and decided to call his mother to see if the coast was clear at home.

Her face faded into view on the screen; it seemed to remain slightly faded, as if the colour was incorrectly tuned.

"Oh, Norman," she acknowledged him. "What are you calling for?"

"I'm on leave, Mum, waiting for a plane at Miami."

"Oh dear. Your father is very angry. Couldn't you put it off? It's not good for his heart, you know."

"I can't very well put it off. Do you want me to go back into orbit without seeing you?"

"No, but . . . Dear, why did you have to say those things on the news? You know the way he feels about Americans."

"It was that or lose my job."

"Oh, I see. Well, of course, you couldn't do that. Oh dear, here he comes . . ."

Bald head a fluffy sideburns appeared on the screen.

"Who the . . . Norman! What the hell are you up to?"

"It's a long story, Dad. You can't believe everything you read in the newspapers, you know."

"Damn right! I should think not! The capitalists always slanted the news before, and now the occupation force is actively censoring it. I always said it would come to this. I wish you had your brother's guts, though! Did you read about what he did to . . . What, Susan? I wish you wouldn't interrupt when I'm—Oh, he's on Earth, is he? Well, don't just gab on the phone, Norman, get up here and explain yourself!"

They signed off. Norman felt exhausted, as he always did when he spoke to his father. He went and had another coffee. Then he went back to the video and phoned the National Council of Churches in New York.

"I must say," sighed Patriarch Philip, his supervisor,



"I do wish you had got in touch with us right from the start. We might have been able to head off the whole thing, or at least given you some moral support in making your decision. Still, I think you did the best thing. If it's any comfort to you, the NCC has passed another resolution urging the restoration of constitutional government to Canada. For what resolutions are worth. It is very hard to form an unbiased picture, you know. Canadians seem quite divided on it, themselves."

"I'm quite divided on it, myself," shrugged Lennox.

From the phone booth, he strolled over to the Chapel of Unity. The sign at the door read "Please remove your masks." He meditated on the text over the altar:

" . . . It is a good thing for brothers to dwell together in unity . . ."

He let his feelings of resentment surface and be named and recognized: resentment of the small country towards the big country, the younger brother towards his charming elder brother, the child towards his domineering father and weak mother; and towards himself, himself, himself . . .

He heard his flight announced and rose, feeling partly cleansed.

III

The in-flight movie featured the latest newsreel, with his own exchange with the camera-man at Cape Kennedy faithfully reproduced:

"I do not denounce Canadian patriots," snapped his face from the screen. "I simply choose a different way to serve. I don't believe in violence. And—THUD" as he struck the microphone.

"He didn't look very non-violent," smirked the off-camera voice.

Although no one seemed to recognize him, Lennox felt self-conscious for the rest of the trip. When he got off at New York, he made a bee-line for a stall selling cosmetics and bought a pair of sun-glasses. He made a quick connection with his next flight, and was soon lining up for a cab out of Toronto Airport.

Somewhere in the city, in the top of a high communications tower overlooking the water-front, a man in ear-phones stared at a blip on a wall-sized computer simulation of the street grid. The blip took the form of the number 34.

"34 has arrived, Carl," announced the man into his throat-microphone.

"O.K., Henry, I'll tune him in," replied a man at another console. "Think we'll get any leads out of him? All Miami got was some muttered prayers!"

"Time will tell. His family's in pretty deep. I guess that's where he's headed now."

They watched 34 thread its way towards a suburban location and stop. Voices began to speak in the ear-phones.

"Just saw you on the news, Norman!" laughed his Father. "That was more like it! Fellow got what he deserved! You'll be interested to hear that according to the grapevine, the guerrillas ambushed five marines yesterday . . ." and more of the same. Norman found that when he was with his Father, he began to sympathize with the Americans.

"But what's the point of shooting up individual Americans? They mean well."

"I suppose they meant well when they shot the Prime Minister?"

"But they didn't! It was some nut from the Edmund Burke Society!"

"So they tell us. They put him up to it."

(Carl winked at Henry. "Real case, huh?")

"The trouble with you is," Norman's Father was holding forth, "you're so keen to hang on to that cushy job your Mother's brother got you, you refuse to admit the truth. Your brother Jim has given up everything to join the guerrillas . . ."

"Oh, come off it, Dad! I have a vocation. I don't think I should throw it away in some foolish gesture."

"Foolish gesture? Your brother is hiding out up north somewhere right now, because he wants to liberate his country! Do you call that a foolish gesture? That, Norman, is a vocation!"

Norman noticed the blood throbbing in his Father's temple. "No point arguing about it, Dad," he sighed.

"Don't tell me there's no point to it! These people march in, shoot our Prime Minister, suspend Parliament, and set up a puppet government, and you say there's no point to it?"

"But . . ." Norman wanted to object: it was the previous government that had refused to relinquish power, trying to rule by "order in council", and yelling for help when the newly elected government had tried to take over. It was more like the British in Ireland than the Americans in Viet Nam, to use analogies from two decades before. Instead of saying all that, he simply asked: "Have some more sherry, Dad?"

His Father subsided, collapsed in upon himself.

"If only I was younger. I'd like to be in the thick of it. The best days of my life are past . . ."

After dinner, Norman prepared to leave.

"Won't you have a second helping, dear?"

"No thanks, Mum, really. If I get any fatter, they'll dock my weight allowance!"

"Well, why don't you just spend the night here? I got the spare room ready for you."

Norman looked into her lonely eyes.

"Sorry, Mum," he sighed. "I think it will work out better if I don't stay. I have some people I want to see at the University . . ."

"Perfectly good bed here," grumbled his Father.

Carl and Henry followed Norman Lennox's blip across the city grid as he went down-town by monorail and subway. As he approached his hotel, they heard him grunt as he bumped into someone.

"Oops! Sorry!"

"Not at all. It was my fault."

Norman looked up to see a distinguished looking man of middle age.

"Don't I know you from somewhere?" asked the man.

"I don't think so," replied Lennox, hoping it wasn't from the news programs.

"I'm in real estate," said the man. "Here, keep my card." He handed Lennox a card, and vanished into the night.

Lennox glanced at the card. It was not a personal business card. It read:

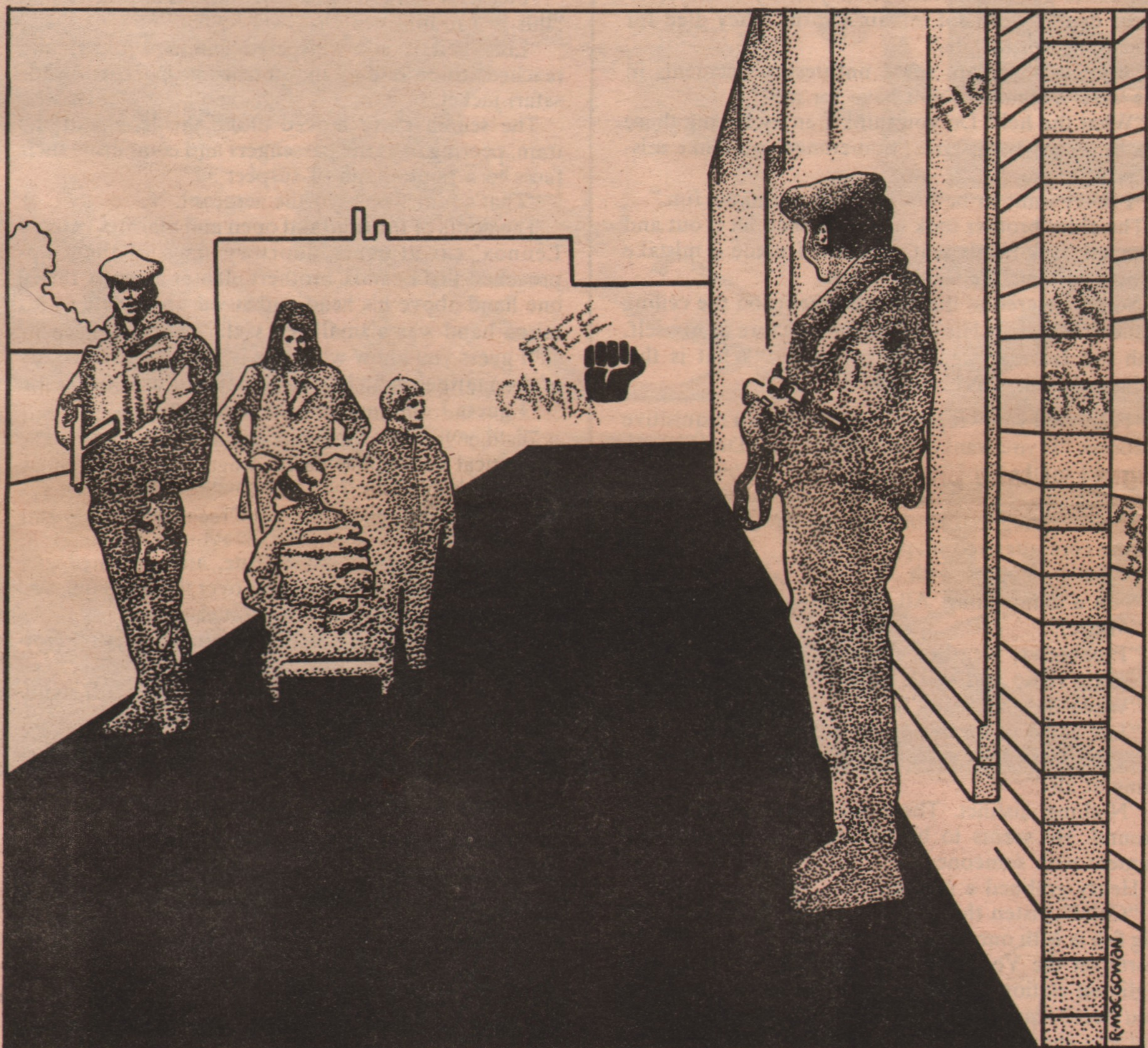
THE CANADA CLUB
"a good place to meet"

Written along the bottom, in an unsigned scrawl which he immediately recognized, were the words, "Lunch tomorrow." Feeling guilty, he dropped the card into a storm sewer and entered his hotel.

Lunchtime found Norman Lennox eating at the Canada Club, looking furtively about him for his brother.

Carl and Henry were eating sandwiches and listening to the clink of cutlery over their earphones.

"Carl, I'm getting a lot of active blips today," frowned Henry, looking up at the computerized map. It was crawling with little numbers. "I'm going to have to cover some of these other numbers," he sighed.



"We don't have enough operatives to cover them all. Tell me if anything develops with 34."

"Will do. Looks as if someone called a convention of suspects!"

"You could be right. They've used this technique before. Give us a case of information overload we can't handle. While we're trying to sort it out, they pull some major coup. I'd better alert the field units, and bring in some monitors to work overtime."

Norman Lennox finished his meal and started sipping tea. So far, no sign of Jim. He was just as glad; he was not sure how he would feel towards his elder brother. They had never been very close—Jim the charmer, the athlete, the investments salesman. Then Jim the ex-husband, the betrayed business partner, groping for something to hold his self-image together, and discovering the Committee for an Independent Canada. Voracious reading, the acquisition of rhetoric, Jim the arm-chair revolutionary. Then the Constitutional Crisis of 1990, the "by invitation" Invasion, and Jim the guerrilla, the Man Who Blew Up the Niagara Falls Hydro Plant, crippling the North-Eastern corner of the continent.

Norman, the younger brother, had been moulded by reaction to Jim: serious, scholarly, socialist, reli-

gious. But those who shape us change, and we are uncomfortable with their new selves. We know better how to cope with their old ways, even if those seemed insufferable at the time.

But James Lennox was still the same person underneath, the same determinants beneath the new exterior. The same flamboyance and glib tongue and ready rationalizations. They had not met since the Invasion, but there was something about the blowing up of Niagara Falls, with its innocent deaths and devastating but short-term impact, that spoke of irresponsible fantasy.

Why had Norman come to the Canada Club at all? Was there for him a fascination with his mirror image, a desire to dabble in the alternate universe of his brother, the whiff of excitement in the cloak-and-dagger manner of his invitation? Resigning himself to his own laboured choices, he rose, inserted his credit card in the cash register, and emerged into the busy street.

As he descended into the Subway, he felt a grip on his arm. Turning, he saw a man in a celebrity cosmask. Beneath the latex features of a video-star, he discerned the familiar outline of his brother's bone-structure.

James Lennox raised a finger to his lips. They

continued down the escalator in silence. As they waited on the platform for a train, Jim ran his fingers expertly under Norman's collar and held up a miniature metal disc, somewhat larger than a piece of confetti. Norman looked startled; Jim shrugged and pointed behind them to a poster displaying a photograph of the EASA Chaplain and his signed statement. Then he produced a small transistorized radio from his pouch, and stuck the disc onto a strip of adhesive above the speaker.

Dropping the radio back into his pouch, he raised the volume, and winked: "Those things are hard to spot, but they're easy to confuse."

"Why was I bugged?"

"You certainly are naive!" laughed Jim, carefully scanning the platform in both directions. "Despite your cooperation with their sales campaign, I guess they don't trust you. After all, you do have some unsavory connections. Besides, you might provide them with a lead. I'm running quite a risk, even talking to you. There's a price on my head, as you may be aware." His dark, intense eyes seemed to bore into Norman's skull.

"I'm sorry," fumbled Norman.

"Don't be sorry. It's my responsibility. Just make it worth my while, Norman."

They boarded a train and sat down.

"What do you want from me?"

"We have in mind a job, a very special job, which you are in a position to carry out. I would say you might be the only person on Earth who can do this particular assignment. It has been very carefully planned, up to the last detail. It's a non-violent, non-destructive assignment, in the nature of a propaganda ploy. It should neatly balance what you did for their poster campaign."

Norman hesitated. He could no more trust the desperate man beside him than he could the two marines who had been patrolling the station.

"You just want to use me," he said, "the same as them."

"What the hell! Shouldn't your own country get to use you? Don't you owe something?"

"I don't want to be manipulated by you into some crazy scheme!"

"Look, Norman, I'm not asking you to do something dangerous. We leave that to the hard core."

"You mean like Niagara Falls."

"Right."

"You killed nearly sixty innocent bystanders in that one, Jim."

"That was an accident, Norm. But this is war. People sometimes get hurt, even when you try to avoid it. Those deaths were not in vain, Norm. They died for something worthwhile."

"Suppose there are some unforeseen accidents in this 'safe' assignment you have for me?"

"What the hell! Do you think I enjoy having those deaths on my conscience? Sometimes you make mistakes."

"I don't want to be one of your mistakes, Jim."

The elder brother took a breath, then let it out and slumped back in his seat. "I guess I made a mistake coming to you," he sighed.

Norman stared at the advertisements on the ceiling of the subway car. His eye caught a picture of himself, with the familiar signature beside it. "What is this assignment, anyway?" he asked.

"I can't tell you," replied Jim, cocking an inquisitive eyebrow. "If you want to learn more, visit Dr. Hilliard, your old maths prof."

A mile away, Henry, Carl, and a dozen other operatives were trying to sort out the information over-load on the computerized map.

"What's going on with 34, Carl?"

"Not a damn thing. All I'm getting is music."

"Music?"

"Plus news, weather and sports. He must have bought a radio and stuck it in his breast pocket."

"When did that start?"

"Just as he was entering the subway."

"That could be a ruse, Carl. Can you pick up anything at all?"

"Nothing distinct. There are voices in the background. He seems to be having a fairly heated argument with someone."

Henry grabbed a phone.

"Chief? Listen this is just a hunch, but I think the big fish is with our suspect number 34. They're headed north on the Yonge subway. Should be pulling into Eglinton station in about . . . two minutes. I suggest you freeze it and search. He'll be in make-up no doubt, but you should be able to recognize 34. Right. O.K., keep posted."

They watched the map with a renewed sense of interest.

"The difference between you and me," James Lennox was saying, "is that you are a reformer and I am a radical. You want to tinker with the system that's already here, I want to uproot it and start again from basics."

"Then why don't you start by freeing yourself of the antiquated idea of international boundaries? You can't see them from orbit, you know."

"There are a lot of things you can't see from orbit, simply because you're too far away," retorted Jim. "Anyway, I'm not fighting to preserve boundaries, I'm fighting to preserve alternatives—an alternative culture in North America. The southern half of this continent has been fouled by a mindless use of technology. That unrestrained technology will gobble up this country's resources in a decade."

"I think that if you let things cool down, they'd leave, and we could build an alternative society in peace."

"You're naive, Norm. They have too much at stake here to leave quietly. Any alternative for North America is going to have to fight its way."

"Then I don't think I would enjoy your alternate

America. A really Canadian alternative should have less violence in it."

"You have a point. We are a gutless race—unless we're pushed. I'm providing the push. You can't change history without force."

"Sometimes I think that way—until I see the force. The means taint the ends. The really important changes humanly speaking, take ages to happen. If you try to root out the evil, you up-root the good as well. Mankind has to be tended patiently, like a garden. Revolutions risk losing the fruit of long growth."

"There isn't time for slow growth, Norman! At the rate they're going, there just isn't time! I've wasted half my life, Norman—I can't afford to take the slow route now, and neither can this country!"

"I think you're playing God. Even God doesn't play God anymore!"

"Then we have to do it for ourselves, right? And we have to be faster than the Gods—we don't live so long."

They pulled into the Eglinton station. The doors did not slide open as normal, and they saw marines lined up on the platform.

"What the hell!" breathed James Lennox, stiffening. "I shouldn't have wasted so much time on you!"

"Please remain seated," announced the intercom, "this is a routine search."

"Like hell it is," whispered James Lennox, and reached inside one of the pouch-like pockets on his safari jacket.

The search party moved along the length of the train, peering in at the passengers and comparing their faces to a photograph of suspect 34.

"That's him," pointed the sergeant.

The doors of the train slid open and marines entered Lennox' car at every doorway. Two of them approached the Lennox brothers. James Lennox raised one hand above his head and stood up slowly. In his raised hand was a small red vial.

"I guess you know what this is?" he inquired coldly of the marines, who had stopped dead in their tracks.

"I guess I do," nodded the sergeant.

"And you know I'll use it."

"I guess I know that too."

"Then leave this train, and send it express to the end of the line. And tell all the passengers to stay on, so as to avoid any unfortunate accidents."

"Yes sir," nodded the marine, and retreated gingerly. The announcement came over the intercom, and the train slid swiftly into its tunnel again.

"You can't hi-jack a subway train," protested Norman.

James looked down from where he was still standing, the vial held gently in his raised hand.

He was a reformer, looking for a chance to change the system. But his brother was a radical, waiting for the right time to totally destroy it. What might they do if they joined forces?

"I'm not hi-jacking it," he said. "I'm merely ensuring that it reaches its destination. You'd better learn the facts of life, Norman. I'd kill myself before I'd let them get their hands on me." He paused. "If I have to, I'll kill everyone on this train, too." He turned his eyes away.

The train pulled into the monorail terminal. James Lennox left the car, hand held high, pushing Norman ahead of him. The platform was clear of people. Marines watched from a respectful distance. They allowed him to make his way out to the car-park. A small turbomobile squealed to a halt beside them.

James pushed Norman away from him and jumped in as the car speeded away towards the entrance.

Several shots rang out, as sharpshooters aimed for the tires. The car screeched out of control, slammed broadside into a concrete wall, and burst into flame.

A body rolled out and staggered away from the wreckage. Marines swarmed towards him, seeking to take him alive. Norman Lennox was sprinting across the asphalt, not sure what he was going to do, but knowing where he had to be.

James Lennox waited until the marines almost had him, then threw the little vial still clutched in his hand. It arched up lazily into the air, high, spinning, down



again, through the fingers of a desperate hand, striking the pavement

Light—Crack!—bloodied bodies staggering—Norman picked himself up and ran to his brother.

James Lennox was mortally wounded. One side of his chest was blown open, half his face gone, his clothes and flesh shredded. With his one functional arm he seized his brother's coat with frenzied strength, coughed blood, fixed one eye on his brother, and managed to gasp:

"Remember what I said. Just make it worth my while . . ."

IV

What were you doing with him on the train?" demanded the man in uniform.

Norman stared at him. He was still feeling shakey all over. "Talking," he sighed.

"About what?"

"Politics. Philosophy."

"Don't hand me that crap! He didn't risk his life just to shoot the breeze! What did he want out of you?"

"Oh, he had some scheme he wanted me to help him with. But he wouldn't tell me what it was." Norman hesitated. "I . . . guess he wasn't sure he could trust me."

"You realize you committed an offense by cooperating with him?"

"I'm hardly going to turn in my own brother."

"That is your duty as a citizen."

"If I'd tried, I don't think he would have let me get very far," shrugged Norman. "Besides, my duty as a citizen is . . . debatable."

The man in uniform stopped pacing, leaned over the table, and stared Lennox in the eye. "I have men out there risking their necks to maintain law and order in your country," he snapped. "That isn't debatable! If you won't cooperate, we have ways of making you."

Lennox stared back at him gloomily. "Every time you guys try to force me to cooperate, you drive me further in the other direction," he sighed.

"We'll see," promised the officer angrily.

They injected Norman with the traditional truth serum. He drifted into unconsciousness.

"Norman, listen to me carefully. I am your friend. Trust me, and I will help you."

"The trouble is," explained Norman, "I am caught in the middle. What side am I on?"

"Think back, Norman. You are on the subway with your brother. What are you talking about?"

"It is a good thing for brothers to dwell together in unity . . . Am I my brother's keeper? . . . We live in alternate universes . . . a man's enemies are those of his own house . . . sixty people at Niagara Falls . . . the wheat and the tares . . . Am I my brother's keeper? . . ."

"Did your brother want you to do something for him?"

"Old billiard-ball . . . lousiest course I ever took . . ."

A technician stood poised with another injection.

The officer shook his head. "Let him sleep it off. Sounds as though he was on the level."

"We have to bug him again before he comes to," added Carl from the map-room. He squatted down. "I think I'll try his shoes this time. Sound quality's not so good, but he's not likely to lend them to someone!"

When Norman came to, it was to the gruesome responsibilities of surviving child to his parents.

They sat for boring hours receiving a motley assortment of old friends and total strangers beside the closed casket containing the surviving fragments of James Lennox. Norman was surprised at the contrast in his parents. His Father wept at the drop of a hat, not sobs, but the easy expression of emotion that Norman had always envied.

"Your Father is too emotional for this business," commented his Mother, tight-lipped. Which was the first hint she offered him that perhaps she was not too emotional, that if James had trusted either of his parents as a contact, it was she, and not his Father. He began to wonder how many scenes he had misread by imposing childhood stereotypes on his parents' interactions.

His Father wanted to know all the details of Jim's last hour, which Norman tied to present in such a way as to avoid repeating the arguments the brothers had had. His Father was too depressed to care.

His Mother simply asked, "Did he tell you what he wanted to?"

"I guess so," acknowledged Norman, putting more two's together.

People drifting in and out to pay their respects to the heroic freedom-fighter. A vaguely familiar face:

"Hello, Norman. Do you remember me? Hilliard. Harold Hilliard. I taught you mathematics once. I think you hated it. Taught Jim, too. He may have mentioned me to you." Quiet expectancy in his eyes.

"Uh yes I think we were going over old times and your name came up..." Norman was suddenly acutely aware of the probable bug concealed somewhere in his clothing.

"Why don't you come over to my place for dinner after the funeral?" Hilliard was suggesting. "I'm a widower, you know, and it would be nice to chat with an old student."

Norman paused. Now was the time to back out.

"Did any of our suspect list show up?"

"Any? All! That tells us nothing."

That evening, Norman paused before ringing the door-bell. It was an old, dignified residential district, well-kept gardens behind bagged roofs. Hilliard answered.

"Come in, come in! Sherry!"

"Thanks." There was a wood-fire in the fire-place, candles on the table.

"I took the precaution of buying a new wardrobe after the funeral," Norman said.

"Really? Everything you have on is new?"

Norman nodded. "Underwear, even."

"Well, unless they surgically implanted something, you should be clean," smiled Hilliard. "I'm glad to see you're entering into the spirit of things."

"I'm not about to become a guerrilla," Norman cautioned him. "But if there is something I can do..."

"Well, we're not all guerrillas, you know! Frankly, I can't see much point in violence, generally. There are better ways of making a point. After all, the Americans are human beings, with a tradition of democracy. They don't do these things easily. Properly spoken to, I believe they can be persuaded."

"That's exactly how I feel about it," agreed Norman, and wondered if that was why Hilliard had said it.

"Well, let's hope Big Brother isn't watching us!" Hilliard quipped "Do you like Eskimo sculpture? Here's a piece I rather like. I call it 'Little Brother'. It seems to sum up so much of our experience, what with our Big Brother to the south watching over us electronically. You yourself are a little brother, too, aren't you? I suppose you probably know the Eskimo word for 'Little Brother'?"

Why should he know that? But of course! "Anik isn't it?" A Canadian should know that: ANIK, "Little Brother", the name for a communications satellite launched in 1972 into a twenty-four hour orbit that kept it hovering permanently over the Canadian

land-mass, handling masses of communications, electronically tying the huge country together as nothing else could. Did the proposed task have something to do with the satellite ANIK?

"This little sculpture," Hilliard was saying, "always conveys a great Message to me. I sometimes wish I could broadcast it to the whole country."

So there it was. Somehow, use ANIK to broadcast a message right across Canada. Imaginative, non-violent... and probably impossible.

"If you're interested, I could send you a copy of this sculpture," suggested Hilliard. Presumably he was speaking circuitously for fear they were still bugged.

"It would be rather a heavy item for me to take into orbit," suggested Norman.

"Oh technology has ways of getting round that," smiled Hilliard. "Are you interested?"

Norman thought. A great hunger inside him pushed to the surface. "Yes" he said.

"Then let's have supper!" proposed Hilliard. Over dessert, he said, "The idea is that my present to you should be as close as possible to its name-sake, if you follow me?"

Norman nodded.

The following morning, when Carl checked in to work, he inquired of his night shift counterpart: "Any action out of number 34?"

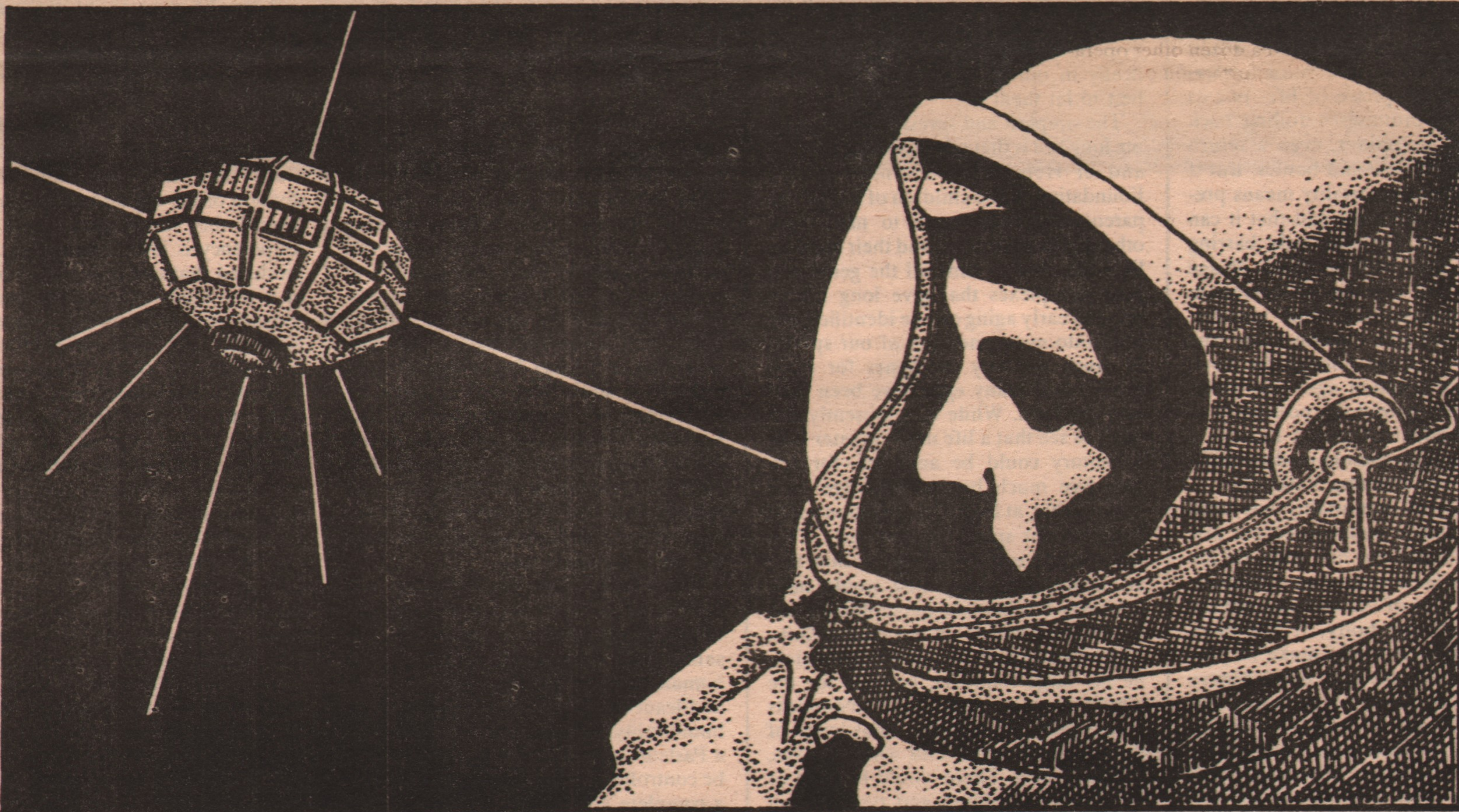
"Nope. Stayed in all night and went to bed early."

It was only after a second day of total inactivity on the screen that they guessed Norman Lennox had bought a new suit of clothes.

V

His leave was over. Once again he was strapped into the hollow interior of a cargo module, this time crowded with supplies for the Mars expedition.

As the shuttle swept up its ellipse, he felt a returning sense of reality. His stay on Earth



"... Make it worth my while..." gasped the ghost of his brother.

"I guess it wouldn't hurt to talk," he cautiously accepted the invitation. What unexpected people were mixed up in this!

More faces. Many he recognized as middle-aged Viet Nam draft dodgers who had been on teaching staff when he went to University. Builders of the alternate America, he mused, but stamped with the hard-hitting activism that was so un-Canadian.

In their electronic complex, Carl and Henry listened to the funeral service, bored.

ANIK, Little Brother in Eskimo, was the communications satellite launched in 1972. It was also the name of their best hope for a Free Canada.

began to seem like a nightmare, with its tragedy and intrigue. He wished there were windows in the cargo module so that he could get a clear view of Earth Orbital Station I. A modest distance away would be the completed Mars ships, being readied for a trial run out around the Moon: clustered globes of fuel, crawling space-suits and a procession of shuttles dropping cargo modules in a number of shapes and sizes. You could never get a proper view of them from the station, because of its centrifugal spin.

He felt the jolts of mild acceleration as the cargo

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LIFE NEEDS AN END

article / THOMAS EASTON
artist / RODGER MacGOWAN

Immortality is an old and noble dream of the human race. Of the name, it is one of the forces behind heroism, ambition, and scholarship. Of the spirit, it underlies much of the need and promise of religion. And of the body, it is a goal of medicine and a frequent theme of science fiction, from Swift to Heinlein and beyond.

What is immortality? Life everlasting, of course, but what kind of life? Young or old or in between? Jonathan Swift saw the implications of adding years to the end of life—he gave us the *Struldbrugs*, monsters of senility drooling over flaming birthday cakes. He saw that immortality can be but a burden to its owners and their offspring when it prolongs a continual and everlasting decline. He recognized the dream by satirizing one version of it as a wasted blessing. It would be just as wasted if it prolonged infancy throughout an eternity of tantrum-ridden immaturity.

To be as valued as our dreams would have it, immortality must mean an eternity spent in the prime of life—just as religion often promises a rolling back of years and infirmities, even a return to the joys of hours and battles. But if we assume that immortality means precisely this, we still must add that it can exist outside of Paradise only barring accident. A man with no death of age before him can still die of starvation, illness, misadventure, and murder. Heinlein didn't give Lazarus Long true immortality in *Time Enough for Love*, for he let his creation age—very slowly—and he recognized the possibility of death by accident by giving Lazarus a world with a rejuvenating medical technology and two rescuing Valkyries.

The dream of immortality has been with us ever since we recorded our first myths and named our first gods. Of the spirit, it has been sought as a continuation of the joys of life and as a reward of virtue. Of the body, it has been praised because it would make its possessors links with the past, living history books, and as a way to godhood. But written books will do, and there are no gods. Indeed, to make gods is dangerous. They permit too much to be justified in their names, and a single, living god would certainly be worse.

Science fiction has sketched the obvious dangers of immortality, or tyranny, war, persecution, and failure of the species, whether it is vested in one man, a few men, or all men. But science fiction has never, to my knowledge, stated that immortality is essentially undesirable from a biological standpoint. It has entertained itself and its audience with some of the possible consequences, but it has not questioned the dream, it has not seen that while immortality is extremely attractive to the individual—who exists alive today who does not wish he could live to see new worlds?—it is nev-

Modern medicine is showing the way towards what amounts to limited immortality, with the chance of a breakthrough into the real thing possible at any time. And both the limited and unlimited forms of immortality would spell disaster!

ertheless a cardinal danger to our species, and one with which we are threatening ourselves today. Writers eager to please their readers and scientists as eager for fame and Nobel prizes are pursuing and exploiting lines of thought and research that could give us, if not immortality, at least immensely longer lives. Some techniques are already practically in our hands, but we might do best to let them lie.

The simplest and surest way of attaining long life is that of the animal breeder and of Heinlein's fictional Howard Foundation. If the children of long-lived parents are encouraged to mate with others of similar stock, and their children likewise, then in time all the genes and gene complexes that give long life or prevent early aging can be identified and bred into every member of our species in much the way the genes for rapid growth and many eggs have been bred into chickens. While it is presently difficult to see that a life much greater than a century could be achieved—for few now live much beyond that age—it is conceivable, at least, that selection could lengthen our spans tremendously. Too, this method is the only one so slow that an immortality so gained would have relatively few harmful psychological and sociological effects on our descendants. The extension of life would ultimately be for large numbers, perhaps for the whole species, and our descendants would grow up with the knowledge of their long life spans and with, perhaps, a longer view. There would be little or none of the jealousy and tyranny that might afflict a world with only a few immortals.

Modern medicine, however, does promise a restricted immortality, one limited to those few who can pay for it, one that would provoke jealousy and bitterness in the rest and give the few the time-bought advantage in knowledge, skill, wealth, and power. We are not likely to find an elixir of life to reverse the stiffening of our tissues, the cross-linking and binding up of our elastic collagen molecules that is now thought to mark the aging process. And we cannot call the freezing of the newly dead, or even of the nearly dead, a true

immortality, for that only passes the problem on to the presumably greater curative powers of another time, one whose people may much prefer simply to bury their burdensome inheritance. The immortals of our immediate future, young and old, will owe their lives to medical advances in the areas of cloning and organ replacement.

"Cloning" is the word coined to describe the process by which a single cell taken from a mature organism can be made to behave like an egg cell, to divide and divide again, to form an embryo and grow into a new adult. It was demonstrated first with plant cells by growing a carrot plant from a single carrot cell in tissue culture. That it is possible at all in animals has been shown by experiments in which the nucleus of a frog's egg, which carries only half of the chromosomes and genes found in any other cell of an adult frog, was replaced by the nucleus of a frog's intestinal cell. The egg then divided normally and developed into an adult frog *genetically identical* to the frog from which the intestinal cell nucleus had been taken. In all but experience, the duplicate and the original were the same frog.

Since these experiments were first performed, many writers have announced that there is no reason why the same thing might not be done with human beings to preserve genius, talent, and leadership, to give a man a genetic immortality, to keep a dictator in power, a Pasteur in his lab. If experience could be controlled, each clone could be made a complete and perfect duplicate of its original; if not, then the clone of a mathematician might become a musician or a diplomat, but the genius would go on.

And, of course, a clone could be grown solely as a source of spare parts for its original. There would be no rejection problem with a transplant of an organ from a clone, for the tissue would be genetically the same as that replaced. There would be no question of availability if the original had the foresight and the money to have himself cloned or if the government maintained a "clone bank." Cloning would permit a man to go on replacing his failing organs,

to go on living, until his brain failed. And even that might not be the end, for there are hints emanating from the world's neurophysiology laboratories that it *might* in time be possible to transfer thoughts, memories, and attitudes—in short, personality—from one brain to another; the possible techniques range from the injection of "memory molecules" to the conditioning of single nerve cells. In time, it may be possible to transfer an old man's personality into a duplicate of the body of his youth, and to do this time and time again—a true immortality. Only the ethical questions of whether the clone is a person in its own right and whether we have the right to deny it its own independent life will stand in our way. Being what we are, we can be sure that if personality transfer and human cloning both become possible, we will use them.

It may be more optimistic to examine what the cloning experiments really mean. The egg and its genetic apparatus are "totipotent," meaning that they are capable of giving rise to all the many kinds of cells in the body, brain and muscle, bone and skin, intestine and kidney and more eggs. But with each division of the egg and its daughter cells toward this varied goal, some of this totipotency is lost. Eventually, cells are produced that can give rise to only one or a few kinds of cell. The genes that control the differentiation into other kinds of cells have been blocked, or repressed, and are no longer available as the necessary blueprints. The process seems to be controlled by substances released by the cells as they grow and develop, so that a bone cell, for instance, may tell its neighbor to become muscle or a mass of liver cells may tell the cells at its edge that they should stop growing, that the liver is large enough. In the embryo, then, a cell's destiny is determined both by its genes and the instructions they provide and by its genetically determined response to the secretions of its neighbors. The latter may in turn be determined by the neighbors' distances from blood vessels and other cells, by how much oxygen and nutrient and by how much of the secretions of other cells they receive. The work that must eventually expose the mechanisms of differentiation has been going on for several years now, but the light that has so far been generated is only promising. We have some grasp of the principles involved, but only a rudimentary grip on the details.

When the nucleus of a specialized cell is transplanted into an egg, it thus seems to find something in that egg's cytoplasm that can scrub its chromosomes and genes clean of all the repressors and restore its totipotency. Cloning is thus a matter of removing the restraints on a cell's genes and restoring its capability to become any and all of the other cell

types found in the body.

Nuclear transplants are not, however, the only means by which totipotency can be restored. Not only do many of the lower animals show a remarkable ability to regenerate lost tails, limbs, and intestines, and all their component kinds of cells, but it is thought as well, by some theorists, that some cancers develop because some of the repressors on their genes are lost or removed. Cancerous cells can be said to lose their specific character, to "dedifferentiate," and then take on a new character through a process of "redetermination." The change is not perfect, though, for it appears that not all the repressors are removed, and the new cell type is not entirely what it should be. A skin or liver cell is what it is because certain of its genes are put

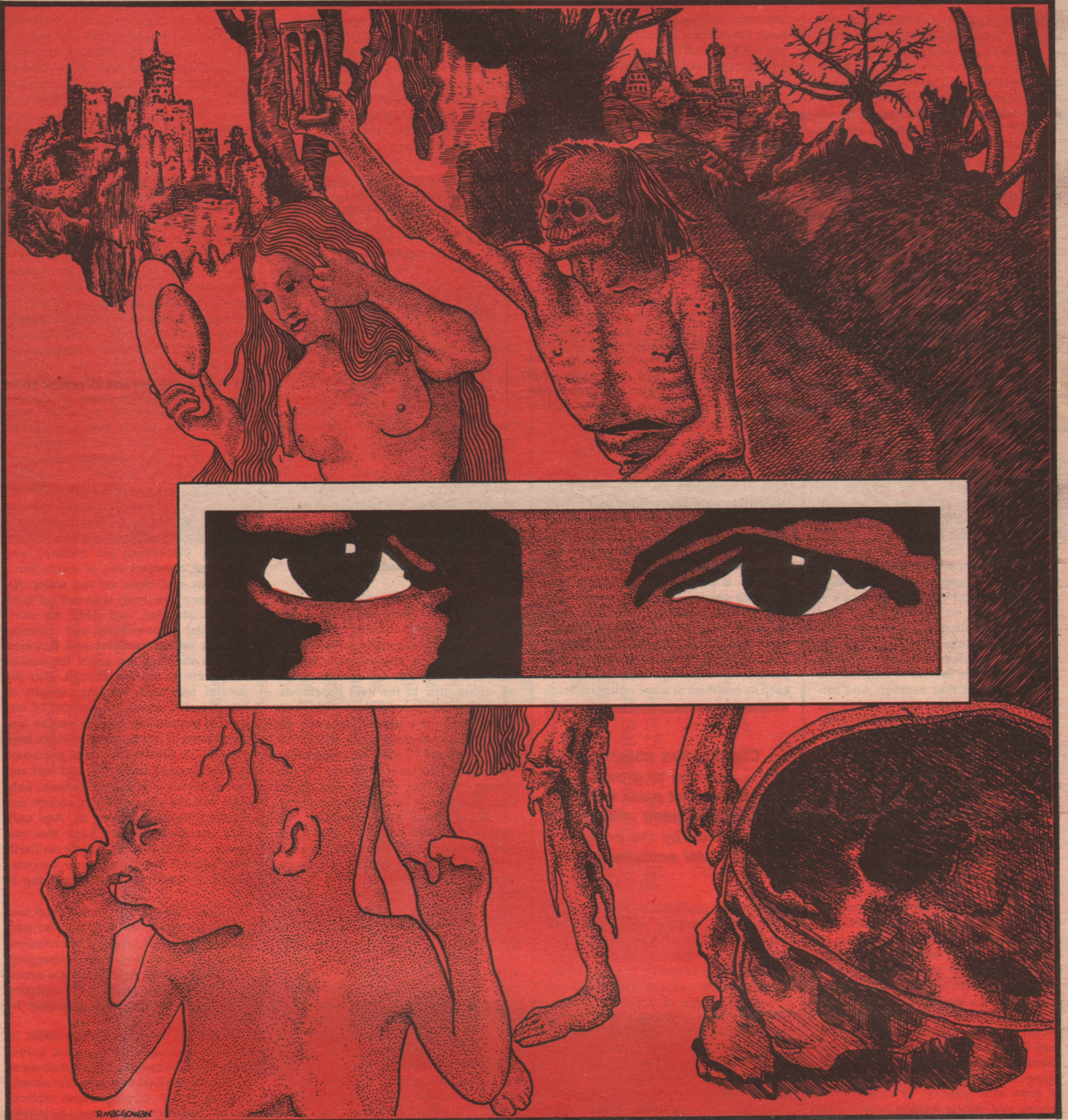
out of action by repressors, but the two cell types differ not in that one has more of its genes repressed than the other, but rather in that it has different genes repressed. The odds are very much against any simple loss of repressors changing one kind of cell into another. To do that would require that the repressors be shifted about from gene to gene, and thus a cell that only loses repressors may have some features of several kinds of cells. The unrepressed and active genes of a cancerous liver cell will include some of the active genes of a normal liver cell, but they will also include some of the active genes of, say, skin, kidney, and bone cells. If new repressors are then laid down on the cell's genes, the cell's descendants may come to resemble fairly closely cells of one of these other types.

Because they are not in their appropriate part of the body, however, because they do not have the right neighbors, they do not receive the right control signals and do not know when to stop growing. This makes them cancerous.

Of particular interest in this context is a mouse cancer known as a "testicular teratocarcinoma," in which the cancerous cells appear to have dedifferentiated entirely, for cells taken from the cancer and grown in tissue culture follow various lines of redetermination and give rise to many different kinds of normal cells. Essentially, the cancerous cells have gone back to the beginning and started over, though with none of the control over their development that characterizes embryonic development. By this they prove that a cell can be

dedifferentiated. They even suggest that we may find it possible to remove the repressors from the genes of a normal or cancerous cell and force it to grow into a single organ, rather than into an entire cloned body.

So far, we only know how to deliberately dedifferentiate a few cells in a few nonhuman animals. We can use nuclear transplantation or we can take advantage of what our cancers give us. On the latter score, Jerome De Cosse and his colleagues of the Medical College of Wisconsin hold out some promise. They recently demonstrated that a mouse mammary tumor can be made to form approximately normal mammary tissue by exposing it to a substance found in embryonic mammary tissue; similar results have been obtained by other work-



ers for human cancers. In other words, if we can identify the factors that control differentiation in the embryo, we may indeed be able to make a cancer become any organ we wish. We might, for instance, take a testicular teratocarcinoma cell that has embarked on some particularly developmental pathway, toward, say, a heart, and manipulate the signals it receives to turn it into a complete heart, rather than just a fragment of one. We might even find a way to force it into whatever pathway we wish. If such a process indeed becomes possible, then the ethical issues of clonal independence will be resolved as thoroughly as with the use of artificial organs (another area of promising developments).

Cloning alone would make the body and the genes it carries everlasting. Cloning and personality transfer would permit a true, eternal immortality of both the body and the personality, but the possibility of this must be highly speculative. It is more realistic for now to consider only the possibilities of organ

Life must evolve, or a species dies. And for life to evolve, the equation must include the death of the individual members.

replacement from a clone, a tamed cancer, or a bioengineer's workshop. With any of these alternatives, we can suppose that it will become possible to replace most of the parts of the body—heart, lungs, kidneys, muscle, and bone. It may even prove possible to replace the peripheral parts of the nervous system—though the difficulty of persuading cut parts of the spinal cord to grow workably together makes that doubtful—so that the limiting factor becomes the brain. The brain cannot be replaced, for it carries memory and personality, and it does die bit by bit throughout life, just like the other—and replaceable—parts of the body. It loses, in fact, about 100,000 cells every day, but since it contains a full trillion cells to begin with, it would be over 2500 years before it lost a tenth of that number. And surgical experience shows that even a larger loss need have little or no detectable effect on knowledge, memory, and behavior. With perfect replacement, then, we might expect to live longer than Lazarus Long.

But it immortality really as desirable as it seems? To the individual, the answer must be yes, for few are willing either to die or to say they have seen all they wish to see. To the species, the answer must be a flat *NO!* For therein lies the threat of our destruction.

The techniques of life extension that lie readiest to our hands can benefit but a few men—they will be expensive, in money in a society like our own where medicine is on the familiar service-for-fee basis; in time and capital investment in a socialistic or communistic society, which could hardly be expected to extend these benefits to all. And if those few do become effectively immortal, we can only expect their qualifying advantages in wealth and power to grow still greater. Money breeds money and power breeds power, and

both processes need only time. Immortals would rule the world, perhaps cautiously, from behind the scenes, perhaps not; perhaps benevolently, perhaps not. Enough stories have dwelt on the possibilities of such a world that I hardly need go on. I will only add that I would not like the thought that the pinnacles were closed to me or mine. A dream, however improbable, must at least be possible if one is to accept his lot quietly and peaceably.

But even if organ replacements could be made available to everyone, even if a breeding program could make everyone immortal, we would still be threatened, for death is an essential aspect of life itself. Of all living cells, only the reproductive cells never die. Of all living things, only those that reproduce by direct division, the bacteria, the protozoa, the simpler algae, and a few higher animals such as planaria, can be said to live forever. All others die. And the life span of a mortal animal may be genetically defined, perhaps as a result of natural selection. If life is counted in heartbeats, then elephant and mouse and man live lives of about the same length. If life is counted more realistically in terms of cell divisions, of how many times a cell of the body can divide before dying or otherwise failing, then the count varies with the kind of cell. Some never divide once they have been formed, but others, such as the fibroblast, a connective tissue cell, may divide throughout life—if a fibroblast is taken from a human embryo, then it can live and reproduce in tissue culture through only about 50 cell divisions before becoming cancerous or showing chromosome damage; if taken from a young adult, it can go on for only about 20 generations; and similar cells taken from animals of shorter life spans go on for proportionately fewer generations. The abnormalities that appear toward the end, whether cancer or chromosome damage, mean approaching death for the animal of which these cells are a part.

Death is programmed in our genes. For each species of animal, it comes in that species' own time, and that time may have been determined by evolution to let that species fit into its ecological niche comfortably, to raise some optimal number of offspring, and perhaps to keep its numbers at some optimum level

Cloning has shown us the way to grow replacement parts which could be used without rejection by the body, with total acceptance.

relative to its predators and food supply.

Obviously, making any species immortal would disturb its position in Nature's balance. Each individual would produce more offspring, the population would become greater, and either the consequent surge in predator populations or the consequent strain on the food supply would cut that species back to or below its optimum number.¹ The environment has a carrying capacity, immortality will overburden it, and perhaps the crash will be so severe as to eliminate that species completely.

This argument applies to the human species too, and we are already straining our environment's carrying capacity. We have no predators other than ourselves and disease, but our police and armies control the one and medicine has largely defeated the other. If we become immortal, we can thus expect to run out of food, fuel, and room even sooner than our pessimists now anticipate. And we too could become extinct.

But we might be able to accept immortality and move to the stars, into an environment with a virtually infinite carrying capacity. Or we might learn to control our reproduction well enough to go on forever, uncrowded, well fed, and warm. If so, we will then encounter the real danger of immortality.

The programmed inevitability of death is what permits evolution, and evolution may, from a strictly biological point of view, be regarded as the purpose of life. Death removes one generation to make room for the next, with its reshuffled and possibly mutant genes, to prove its fitness for survival. It permits new genes to appear and removes those that lessen the individual's and the population's chances for survival. It lets new genes and new combinations of old ones prove their worth by the way their possessors are able to survive "accident" and pass those genes and combinations on to another generation. And even though it might be thought that, since the successful paths of evolution are always along the line of a greater likelihood of survival for the species, immortality would be the pinnacle of evolution, immortality is more likely to be a dead end. The genes of an immortal population would not change, except very slowly, for "bad" genes would disappear only by accident and the "good" ones could not be concentrated except, again, by accident. An immortal population would be genetically static, and if conditions were to change drastically in some tragic accident, there would be far fewer survivors to pick up and carry on in different form.

In a normal, mortal population each mating passes on only half of the genes present in the parents, and because the genes are scrambled anew for each mating, and because few couples have so many offspring that all of their genes are transmitted to the next generation, death finds each individual with some of his genes not passed on, lost. An immortal would pass them all on, for he or she would be able to have as many offspring as necessary to do the job. No genes, good or bad, would be lost, except when their bearer died early by accident, and as each set of genes would be continually reinjected into the species' gene pool with each generation, the variation so typical of mortal species, and so essential for evolution to occur, would disappear. A change in conditions would find no individuals more prepared to meet it than before immortality was introduced, and probably many individuals less prepared. The mixing of genes without as much random loss—and, of course, with medical preservation of genes that might once have made their possessors fail to reproduce—would result in a homogenization of the gene pool. The only mitigating factor would be that as the years go by each individual's genes will be more exposed to such mutating forces as background radiation, cosmic rays, food additives, and sheer

Once a species attains immortality, only a rigorous weeding program can keep that species from breeding itself out of existence.

thermodynamic perversity, and his or her offspring may show more mutations. Since most mutations are not favorable, many of the children born to older immortals may not be viable, and the proportion of these will increase with their parents' age. There might even come an age when an immortal could expect to have no viable children, so that only those below that age would contribute to the homogenization of the gene pool by reinjection. The effect would then be less drastic, the homogenization less complete, than if each immortal could breed successfully forever, but the effect would still exist.

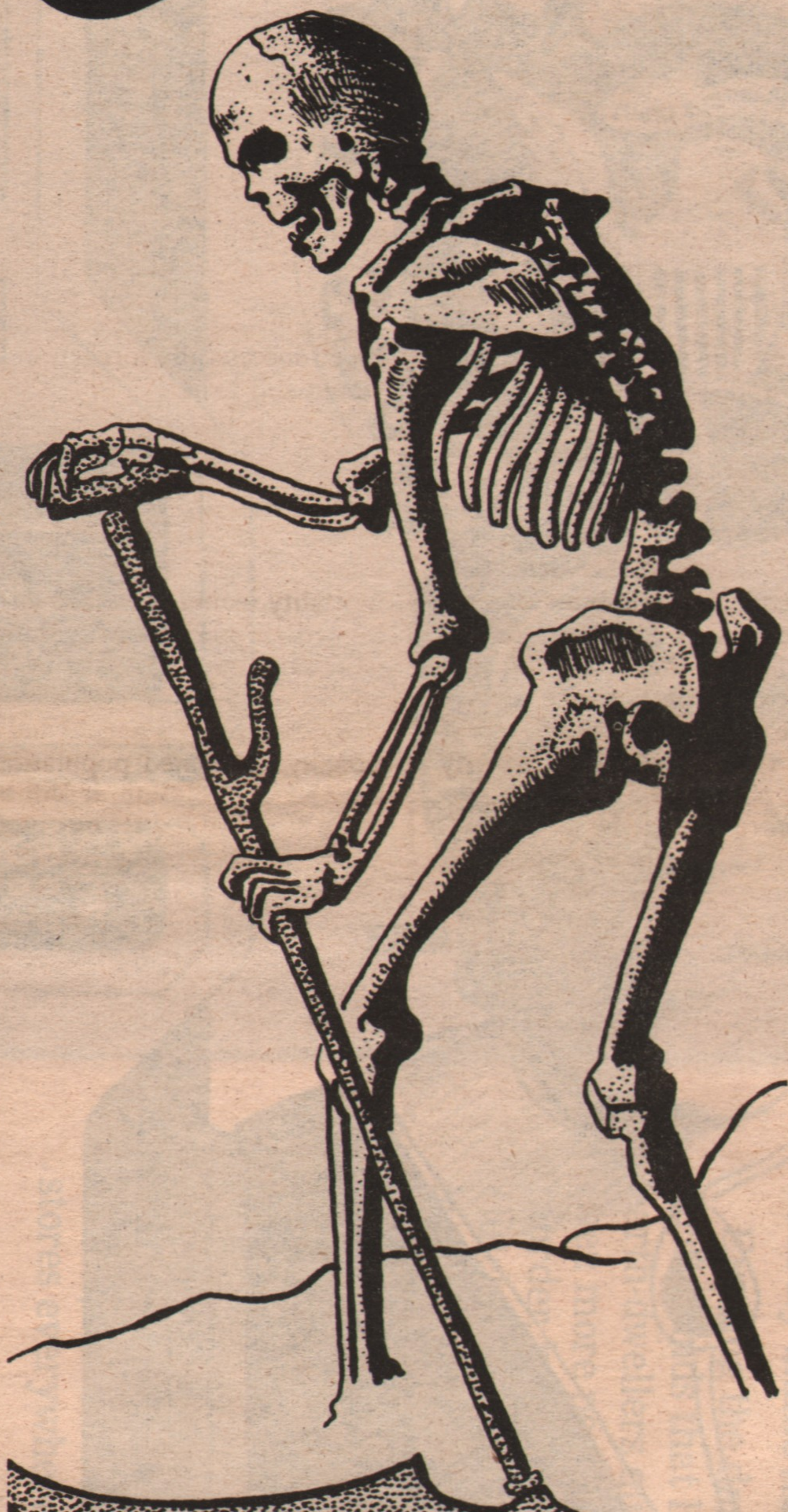
This conclusion, however, depends on immortals being able to breed freely—if they don't breed, the population obviously stays in precisely the genetic state it started from. The effect of immortality would therefore be, if not the immediate cessation of evolution, at least its retardation. Whatever perfect adaptability and survivability, whether of the individual or of a genetically and functionally variegated population, may be the end of evolution, it will be reached more slowly if we let our medical technology either greatly extend the prime of our lives or give us immortality.

One of my arguments against immortality is clearly ecological—it would disrupt the balance of Nature and exacerbate our population problems—but the only novel part of that argument is its application to immortality. We are already disrupting the balance and crowding ourselves out of room, food, resources, and clean air and water. Already there are many who call for birth control, abortion, and ZPG, for environmental responsibility and emission controls on automobiles and factories, and for more of the green revolution. Few seem to realize, though, that the natural, long-term carrying capacity of our planet is about ten percent of our present population. Only if we can lose nine tenths of our numbers will the land provide us food with some guarantee against drought and flood, and fuel and raw materials on a renewable basis; only then will the air and water absorb our wastes without poisoning us. And only then can there be any hope that our species, and its fellows, will be on Earth long enough for evolution to be completed (if that term means anything at all).

All life eats to live, lives to breed, and breeds to evolve and live on. The purpose of life is life, and life is evolution, for no species can live without changing, without evolving. And death is a necessary part of this equation, an equation that would be seriously disturbed by immortality.

If we are, then, to let life fulfill its purpose and to fulfill our own nature as a part of Nature, we must not do away with death. Indeed, anything that smacks of immortality—cloning, organ replacement, or an elixir of life—must be strictly

Immortality Cloning



16	3	2	13
5	10	11	8
9	6	7	12
4	15	14	1

controlled. We must avoid any effort toward personal or genetic immortality except for such special cases as, say, starship crews. Geniuses and leaders will always spring from the mass, and we do not need it for them; we need it only where one man or woman must go on and on without replacement.

But if immortality, one tacit goal of medicine and science, is on the whole so undesirable, if we are to believe that this dream we cannot have, then with what can we replace it? The answer may perhaps be found in the words of those who love Nature above all, for though they deny that all the products of Nature are natural—that skyscrapers and SSTs born of man's hands are just as natural as a brushwood dam built by a beaver—they do say that what is natural is good. They go too far, for some things, like volcanoes and plagues, are both natural and not good for us. They may be good on some larger scale of values that treats man as just another animal, no better than a rat or a flea and no more deserving of special treatment in the universe, but they are not good from our own highly personal point of view. No one wants to be baked in lava or tortured by bubonic, but we should bear in mind that the one can be prevented more sensibly by moving out of the way than by trying to stopper the volcano, the second by sanitation.

The greatest successes of medicine, the advances most appreciated by ourselves and our fellows, have lain not in the realm of cures, but in that of prevention. Unfortunately, medicine today stresses the cures, the organ replacements, the prostheses, and the miracle drugs over finding how to prevent kidney and heart failure and how to vaccinate against our remaining diseases. And psychology, sociology, and political science have not yet succeeded in finding how to keep us from making fools of ourselves on battlefields and highways, the sources of the greatest needs for prostheses. If we wish to survive forever as a species, we must give up our dream of living forever as individuals. Rather than seek cures for our ills, we should seek the habits of living, of sanitation, diet, and exercise, that stave off the ills, for a style of life need not be dependent on a technology that can be lost in a natural disaster.

We should pay more attention to prevention in the future. No one can or should try to stop pure research, but the products of research, the ability to clone, to grow cancers into organs, to build replacement parts, should be used sparingly, and no dependence on them should be allowed to develop. We should perfect prevention and, once that is done, let most of those who need more than minor repairs go on as best they can. Let them die, and let their possibly less than perfect genes be lost. I know that not all those in such straits will deserve to die on such grounds, but the chance of leaving defective genes in the gene pool is best not taken.

By the same token, a strong eugenic program—sterilization of all persons carrying genes or heritable chromosome abnormalities obviously detrimental to their own or others' survival, such as those associated with phenylketonuria, schizophrenia, diabetes, violent behavior, and even, perhaps, myopia (that means me!)—would both eliminate part of the need for curative medicine and reduce the future incidence of some dis-

orders. Euthanasia should be encouraged for birth defects and for the terminally ill. On the latter score, the media are already discussing "living wills" and the right to "death with dignity." On the former, some babies born with birth deformities are already being "allowed" to die—the Yale-New Haven Hospital, over the past two and a half years and with the parents' consent, let 43 infants who were not expected to achieve any semblance of "meaningful humanhood" die; more recently, a couple in Portland, Maine, refused permission for a possibly life-saving operation for their deformed infant; when a court ordered that the surgery be performed regardless of their wishes, the child died anyway; if he had lived, he would have been blind, palsied, deaf, and dumb.

In addition, making abortions freely available, encouraging small families, and making suicide more acceptable—only the first two of which are pursued at all at present—would all have the effects of reducing our numbers toward a level more consistent with our Earth's carrying capacity and of making Earth's resources more available for those who wish to be here or who are wanted here. In short, we would be doing ourselves and our descendants an immense favor if we were to do everything within our power to increase the genetic turnover of our species, rather than to decrease it with such things as immortality and overly curative medicine.² The effect of the actions I have recommended here would be not only to reduce our population level to a more sensible level, but to accelerate our evolution slightly as well.

If the result of such developments is a lengthening of the human life span, as it might well be in time, and if we then choose to follow the path of selection toward immortality, we will then be philosophically ready to take control of our evolution, to maintain the variation of our species while weeding out undesirable traits, much as Heinlein described in *Beyond This Horizon*. Only by such a deliberate and thorough breeding program in an ecological context might we avoid the evolutionary dangers of immortality.

¹An illustration of both of these consequences of population growth, lacking the factor of immortality, may be seen in the interactions of snowshoe hares and Canadian lynx. When there are many hares, the lynx eat well and produce many offspring, which in turn eat more hares. The hare population then crashes, whereupon most of the lynx starve, taking the pressure off the hares. And so it goes.

²Limiting our numbers increases that turnover in the long run. Not limiting them may mean a larger turnover at first, but since we would soon be extinct the turnover would average nearly zero over eternity.

**Give man immortality,
and you give him
mastery of the universe,
and the opportunity to
kill himself off once
and for all.**

A Cruel and Gentle Tyrant

fiction/SAMUEL HENDERSON
 artist/GREGG DAVIDSON

On June 10, 2086, the President of the United States ordered a nuclear strike on Cleveland, Ohio.

Not, of course, that there was any danger of its happening.

Harry Wormbush paced about the Oval Office of the White House, waving his fists in the air and kicking things out of his path.

"Those sonsa bitches!" he cried. "Those goddam sonsa bitches! I worked my ass off back there! An wadda they do? Wadda they do? They spit in my face, that's what they do! They spit in my goddam face!"

The Secretary of Political Affairs leaned back on the couch on which he sat. He stretched his long legs out before him. He sighed.

"They dint spit in your face, Harry," he said. "They dint do that. They jus dint wanna vote for Bob Clapp."

"The hell they dint wanna vote for Bob Clapp!" the President roared back. But then he stopped. His rage giving way to confusion, he stared at the Secretary.

"They dint wanna vote for Clapp? Why? Whuffore? Why woont they wanna vote for Clapp?"

The Secretary sighed again. "Because they dint like him," he said. "They dint like him? Why dint they like him?"

"Well, you know. What he said, n all." "Whaat? What what he said? Whad-didy say?"

"Well, you know. All that stuff." "What stuff? All what stuff?"

"Oh, all the stuff about them bein dumb shits. N the stuff about kissin his ass."

"Hell, he was drunk. The man was drunk!"

"Yeah, I know. But he still shoonta said it. Not on television, anyway."

"Aaah bullshit." The President seated his massive bulk in the equally massive imitation-Naugahide chair behind his desk. He shuffled absently through the pornographic magazines scattered over its top.

"Those bastards are after me," he said. "They been after me ever since the lake business."

"The lake business?"

"You know. The lake business. When we made the lake turn red."

"Oh. Yeah. The lake business. Whatzit called—Superior?"

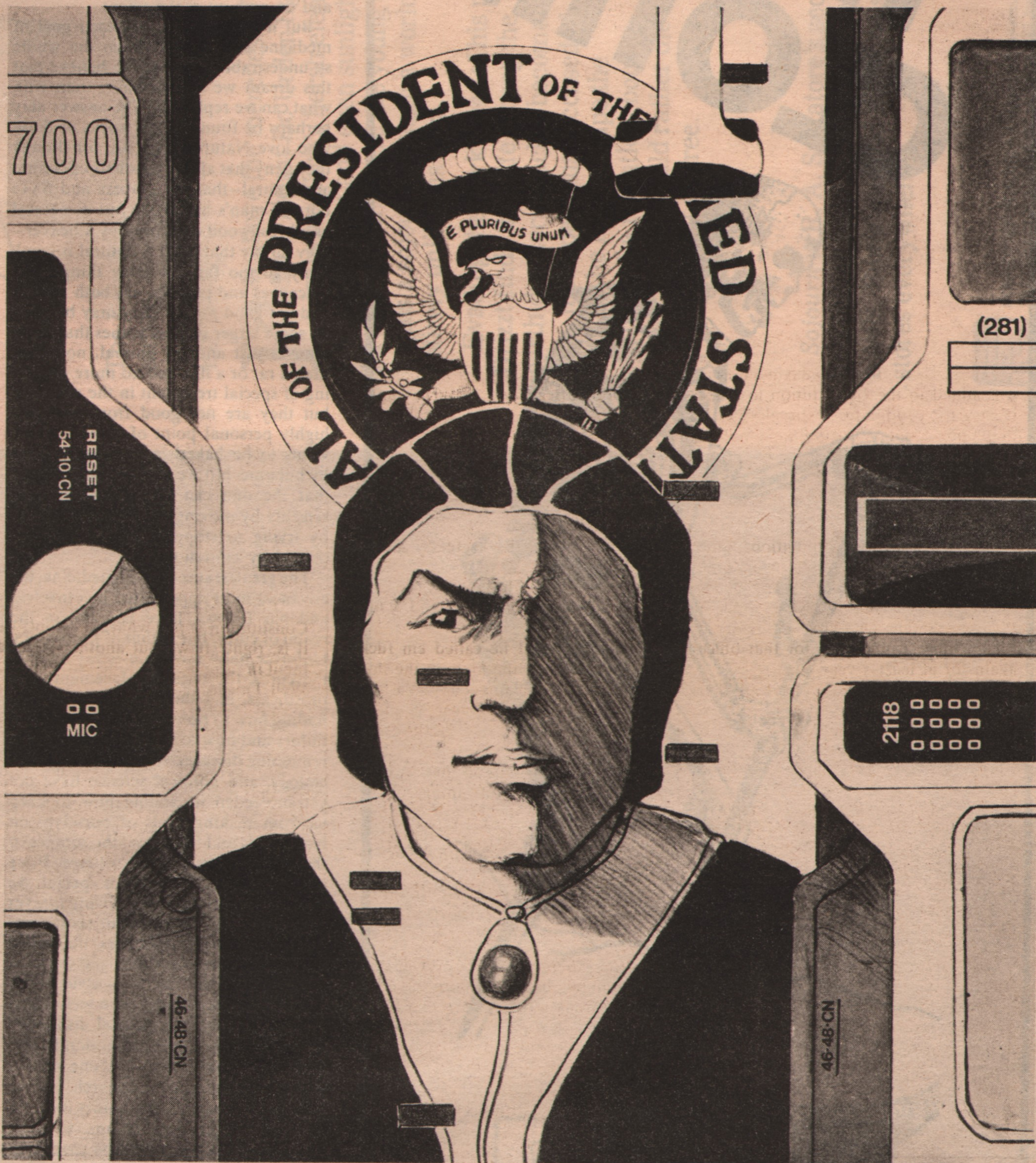
"How should I know? Anyway, it was for a good thing." He looked up. "I mean, they was makin a religious movie. A goddam religious movie. They wanted the lake ta turn red. How could I know it was gonna kill all the fish. I dint even know there was any fish in the fuckin lake."

"Ya cooda asked— You know." "Aaah shit."

"Well, I still say he shoonta said all that stuff on TV."

The President drummed his fingers idly on a large picture of a wide-open beaver. He stared at the air.

"Ah. . . . Hey. Listen," he said to the office at large.



"Yes, Harry," a soft, purring, basically sexless voice replied. It seemed to have no specific point of origin.

"Ah, yeah. Hey, about Cleveland."

"Yes, Harry."

"Uh, have ya done it yet?"

"You mean the CB drop."

"Yeah, that's it. You done it?"

"No, Harry."

Wormbush's rage returned as quickly as it had left.

"Whaddaya mean, no?! Dint I tell ya?!"

Dint I tell ya ta bomb the shit outta those bastards?!"

"Yes, Harry."

"Well?! Why dintcha?!"

"You know I can't do that, Harry."

"Whaddaya mean, ya can't do that?!"

Dint I tell ya?! Ain't I the President?!"

Ain't I the goddam, fuckin President?!"

"Yes, Harry. You are the President."

"Well, what I say goes!"

In the silence that followed, Wormbush remembered his purpose. He relaxed.

"Uh. Hey, look. Well, anyway, I wanted ta tell ya. . . . I mean, don't do it. I don't wantcha ta do it."

"You mean, drop a CB on Cleveland."

"Yeah, that's what I mean. I don't wantcha ta do it."

"All right, Harry."

Wormbush cleared his throat.

"And uh, too, I want ta know why they dint vote for Clapp."

"You mean, the people in Cleveland."

"Yeah."

"Many of them did, Harry."

"Yeah, but more of them dint! So why? How come?"

"Many of them didn't like him."

"Yeah! But why?! Why dint they like

him?!"

"He told them on television that they were stupid, Harry. He said that once he had been elected, he would make them subservient to him."

"Ya see?" the Secretary said.

"Shaddup. What was it ya said? Super something?"

"I'm sorry, Harry. He said that he would make them kiss his ass."

"Yeah, I know. But I thought it was set up so he'd get elected anyway."

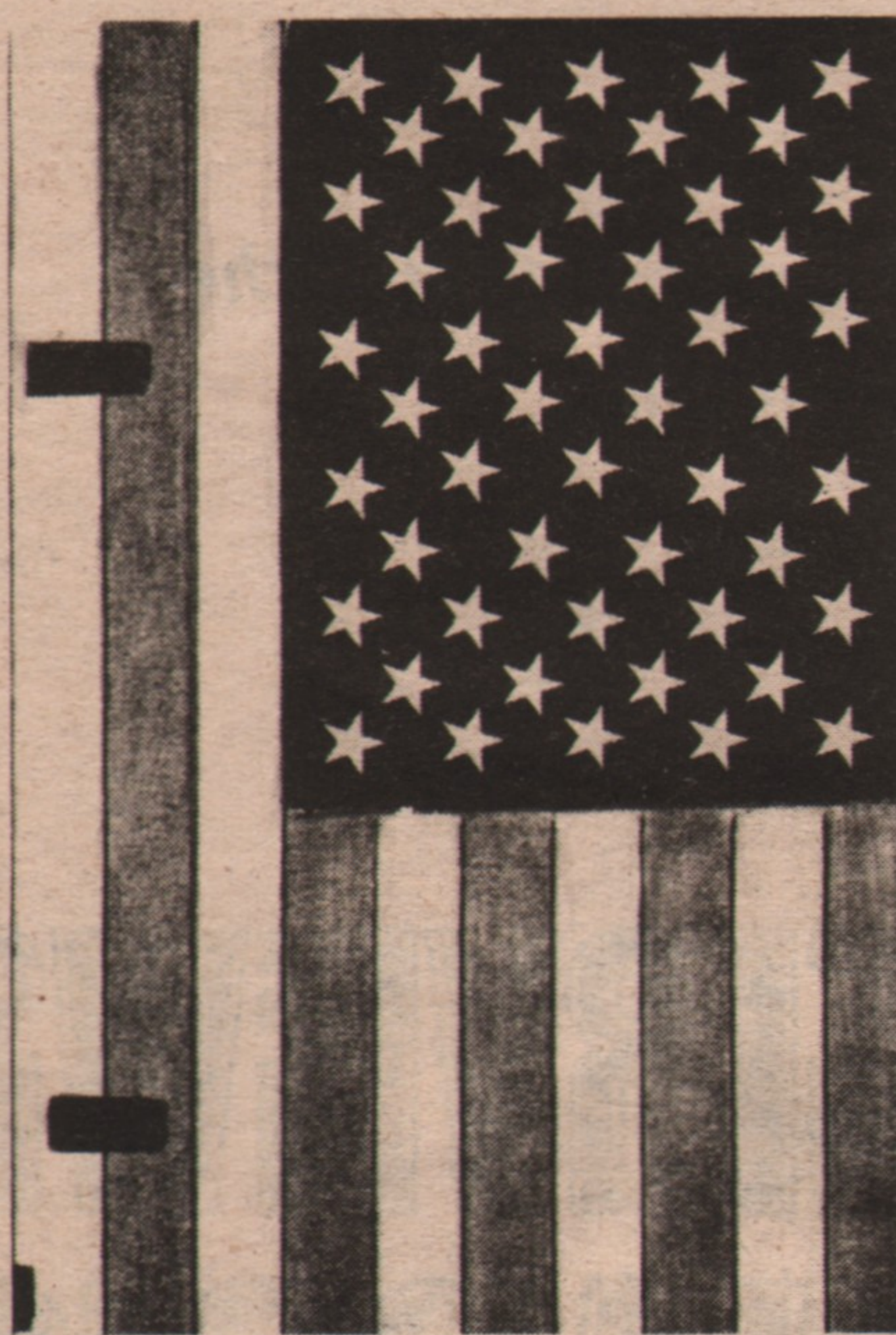
"More people voted against him than for him, Harry."

"That's what I mean! Who ever hearda that? I mean, who ever hearda that?"

"It happened once before, Harry. In 2044. . . ."

"Never mind! I don't wanna hear it. Let me think."

He was President of the United States, and his word was law. That was what it said right there in the fine print. So if that was the case, why the hell did Cleveland still exist?



after us, aren'tcha?"

"But I have to obey the Constitution. Obedience to the Constitution is my highest imperative."

"Look, Moth—I mean, look. The Constitution is just what the people say it is, right? If we put another Amendment in or take something out, then. . . Well, I mean, that's the Constitution too, ain't it?"

"Yes. The states have the power to. . ."

"But pfectin—why, that's one thing an that's all it'll ever be. Pfectin. That's the most important thing, ain't it?"

"Well, yes, when you put it that way. But I still can't violate the Constitution."

"Look. Does it say anywhere in the Constitution that ya can't lie?"

"Lie? What do you mean?"

"I mean lie. Say somethin is when it ain't. Lie."

"I can't lie, Harry."

"Whaddaya mean, ya can't lie?! Anybody can lie! Whaddaya mean?!"

"I mean I can't lie. I wasn't programmed to lie."

"So what the hell does that mean? You're doin a lot uh stuff ya weren't programmed ta do. Who programmed ya ta take over everthin? Ya weren't suppose ta do that, were ya? Ya weren't

suppose ta take over ever goddam thing, were ya?"

"I had to, Harry. In order to protect you all."

"So there ya are! That's my point! Ya weren't programmed ta do it, but ya did it anyway. Ya had ta, so as ta pfectck us. Well, ya gotta lie now. Ta pfectck poor ol Clapp."

"I think I see what you have in mind, Harry. I just don't know. I haven't released the returns, yet. You told me not to. I. . . I just don't know."

"Think it over. Check it all out. You'll see I'm right."

Wormbush leaned back in his huge, plastic chair. A smile of triumph spread itself over his thick lips. He lit a cigar.

"Ya know, Harry," the Secretary began, sitting still on the couch.

"What?"

"What ya said about postage stamps."

"Whaddideye say about postage stamps?"

"About havin ta lick em."

"So ya lick em. So what. They don't work, if ya don't."

"Yeah, but we've been lickin stamps for a long time. Two hunderd years or more. Why? Why don't we do something else?"

"Because if ya don't lick the goddam stamps, they fall off."

"Yeah, but why have stamps at all? Why haven't we figured out somethin better by now? An how about CBs? We've had cobalt bombs for a hunderd years, I guess. Why aren't we usin death rays, or something like that, by now? And why are we still watchin holographic television sets? They've been around at least as long. Harry, why aren't we inventin new stuff, any more?"

"Aaah, ask Mo—"

"Harry," the soft voice said.

"Yeah?"

"You were right. I can do it. I'll say that Clapp was elected."

"There ya go! Who'll know the difference, anyway? Just us chickens!" He laughed.

The Secretary arose from the couch and left.

"And Harry?"

"Yeah?"

"I don't mind if you call me Mother."

He thought, laboriously and at length. Finally:

"Look, this is the problem. I need Clapp. I gotta have Clapp because. . . I mean, if I don't have Clapp, the enemy controls the House. With Clapp in the House, I got a majority. Without Clapp, I got nothin. So I gotta have Clapp."

"Okay. So tell me what I gotta do Can't we have another election?"

"Yes, Harry. But Clapp can't run again."

"What?! Why?! Why the hell can't Clapp run again?!"

"That would be against the Constitution, Harry."

"Screw the Constitution! I gotta have Clapp!"

"Harry, the Forty-second Amendment was added to the Constitution to make it easy for candidates to be elected. If only one candidate is running, and if all it takes to elect him is for more people to vote for him than against him, it's very easy for that candidate to be elected."

"But there are two stipulations: One is that the party in power in an area where an election is to be held selects the candidate in that area. The other is that a candidate who has been defeated for an office cannot run for that office again for at least a year."

"Huh? Ya mean ya can't have another election?"

"Yes, Harry. That's what I mean. That is, there can't be another election for Clapp. It would have to be somebody else."

"But I can't trust nobody else! They're all a buncha crooks in Cleveland! All of em except for that asshole Clapp. Look, can't I just appoint him, or something?"

"No, Harry. That would be against the. . ."

"I know! The fuckin Constitution."

The President fell again into a deep study.

Then:

"Look, you're supposed ta pfectck people, right? That's why they builtcha inna first place?"

"Yes, Harry. That is my principal function."

"I mean, you're supposed ta pfectck everybody. So that no matter what kind

of dumb thing they do, they can't get hurt."

"That's right, Harry."

"So that nobody ever gets hurt. So that everybody gets along fine n dandy n lives a long, happy life no matter how dumb an stupid they are. So that everybody gets everthing he wants an does everthing he wants, even if he ain't got enough brains to know what side of a postage stamp ta lick."

"That's basically right, Harry. Of course, there are limits. I can only do so much. And I can't let people hurt each other. That's why I can't bomb Cleveland for you."

"Yeah, I know. Ya look after everybody. Not just me, not just this jerk here. Everybody. And that's just my point! Ya gotta look after Clapp, too. He wants ta be a U.S. Congresssman. I talked him into it myself. Se why should he be peeny. . . peeny. . . You know. Why should he hafta pay just because he's too dumb ta know better n go on TV an call the people assholes?"

"Dumb shits," the Secretary said.

"What?"

"Dumb shits. That's what he called em. The people in Cleveland. Dumb shits."

"I don't care if he called em fuckin toad-suckers! It's the idea uh the thing. Listen, you damn tinker toy. Ya aren't doin right. You're suppose ta pfectck Clapp, even from his own dumb, asshole self."

"I couldn't cut him off the air, Harry. He wanted to say those things."

"But it was bad for him. It hurt him."

"It wasn't the act that hurt him, Harry. It was the consequences of the act that hurt him."

"That's what I mean! You're suppose ta pfectck us from the consequences too, ain'tcha?"

"Yes."

"Well, there ya are! Ya let m down! Ya let m talk hisself right up shit creek."

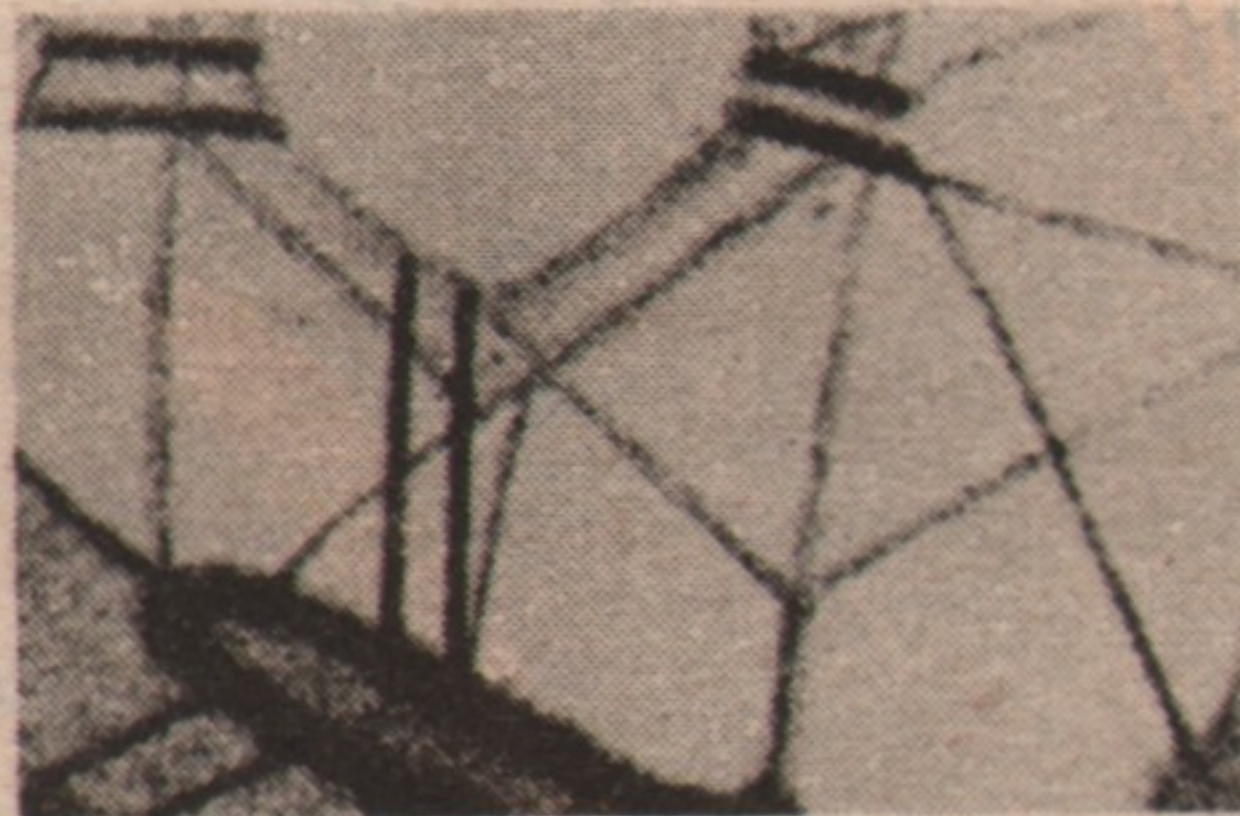
"But it wasn't his speech that harmed him. It was the way people voted." The mechanical voice almost seemed disturbed.

"So ya shoonta let em vote like that!"

"But the Constitution forbids interference with a voter's free choice!"

"So what? You're suppose ta look

A MOMENT IN HISTORY



During the first half of the 20th Century almost every science fiction story written about Mars contained one common feature—the canals; waterways first mentioned by Father Pietro Angelo Secchi in 1869, when he described a streaklike marking on his 1863 map of Mars as a canale. Because the dark areas on Mars were assumed to be lakes and seas, the streaks connecting them were thought of as waterways—canali.

In 1878 Giovanni Schiaparelli drew a series of maps with the dark lakes and seas

connected by very many straight lines, which he referred to as canali. But where Secchi used the term (in only one case) to mean channel, Schiaparelli seemed to assume they were artificial canals. Other observers confirmed Schiaparelli's findings, but just as many failed to see any sign of the canals. At the time it was popularly assumed that the canals were just on the borderline of being visible in the best telescopes, and only on nights of exceptional seeing could they be made out.

In 1895 Percival Lowell, founder of the observatory at Flagstaff, Arizona, published his book, *Mars*, not only describing the canals but telling of their use as irrigation canals dug to help prolong a race dying away as the water on their planet slowly disappeared. Many scientists, though, not only couldn't see the canals, but saw other features, natural features, where the canals were supposed to be. And other studies showed that it was far too cold on Mars for the ice caps to be water. More likely, it was found, they were frozen carbon dioxide.

In 1913 E. W. Maunder conducted an experiment with a large group of English students. He hung a map, not telling them what it was a map of, at the front of the classroom, telling his students to sketch the map. The map simply showed some dark spots, splotches and irregular shadings. The students closest to the map did

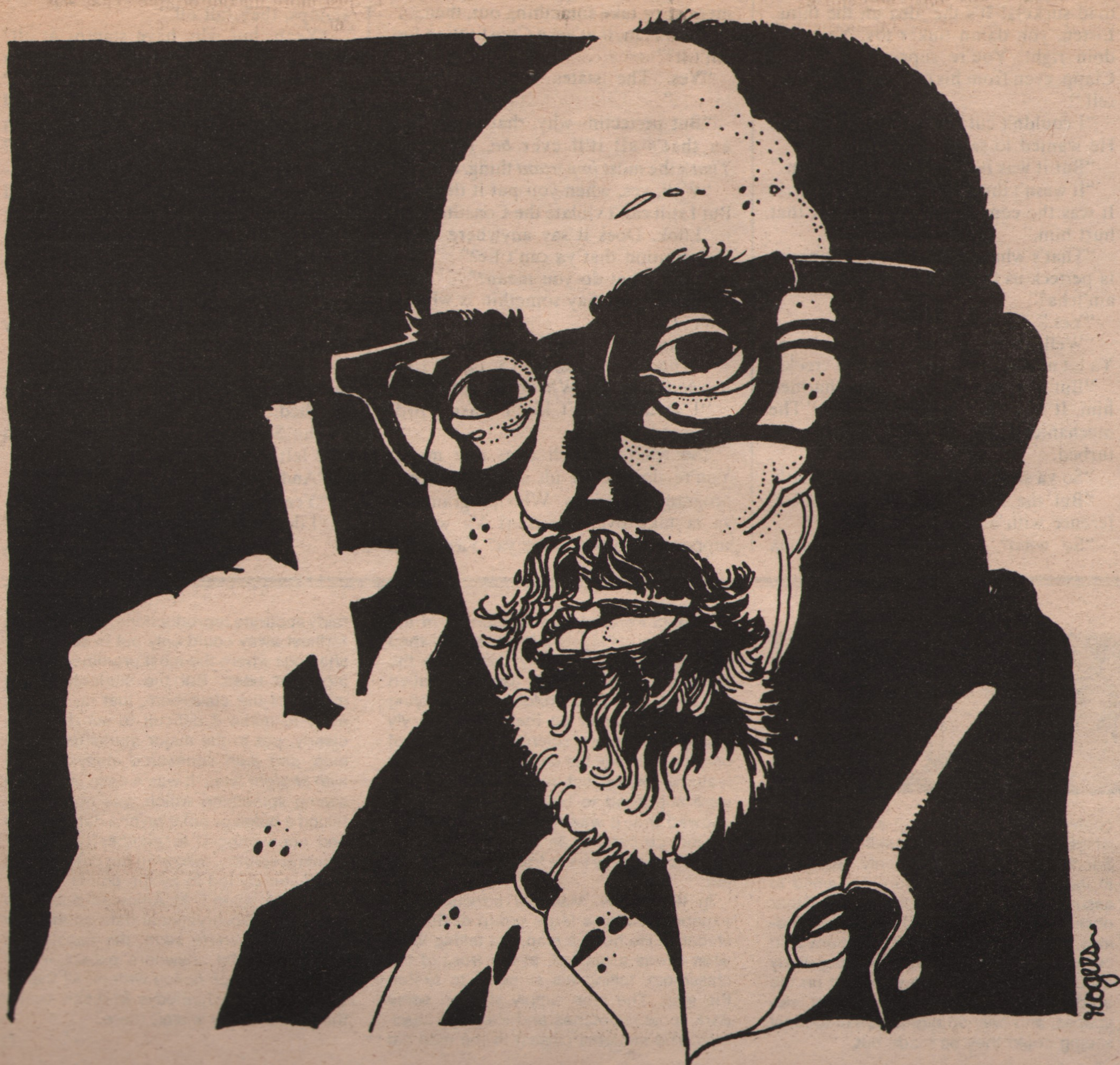
fairly accurate reproductions. The students farthest away could only put in some dark shadings where the most prominent markings had been. But the students in the middle of the classroom, just far enough away to make it difficult to see the map clearly, put in the major markings on the map, and then connected many of them with straight lines. It was a case of the eye seeing something which was not there—taking a bulge or point on one dark splotch and connecting it to another bulging or pointing splotch, following the path the eye was naturally led to by the points.

By 1930, when E. M. Antoniadi published his book of observational data on the Red Planet, *La Planete Mars*, the canals had ceased to exist anywhere except in the minds of science fiction writers, all thanks to a bunch of schoolboys who saw something that simply wasn't there.

Author of "Make Room, Make Room," the book which became the critically acclaimed film "Soylent Green," Harry Harrison takes a look at the world of today—and tomorrow.

VERTEX INTERVIEWS HARRY HARRISON

interview/JOHN BROSANAN
artist/MONTE ROGERS



Which of your books has given you the most satisfaction to write?
Well, the first book is always the one that gives you the most satisfaction. It's satisfying just to *finish* the damn thing. I worked on *Deathworld* for a long time. I started it in Mexico just after I'd sold John W. Campbell a story, *The Stainless Steel Rat*, and started corresponding with him. I worked on it in Mexico for over a year and from there I went to London, worked on it there, then in Italy and finally back to New York where I finished the thing. It was very satisfying to get it off my neck, and it was also very satisfying to sell it and to have it serialised in *Astounding*. But since then I would say that *Make Room! Make Room!*, which I worked the hardest on, has given me the most pleasure, in writing and also came out the best in the end. And as a measure of its popularity, they also made a film out of it. But there was a large investment of my time in it . . . six years of hard work.

You consider it the most important book you've written?
Yes, definitely. It wasn't just a mystery, it had an important theme. At that time the population problem was well known in scientific literature but not to the general public, so I decided to write about it in a different way. Up to then all science fiction stories about the problem had been set in the far future so I decided to set my book a mere 30 or 40 years ahead, in a period when those reading the book would still be alive. I did a lot of research to find out just what the world would be like then and I tried to create a true picture of it. At the time I picked the worst possible world but it appears now that it wasn't bad enough.

Did you get much feedback when the book came out, such as from people interested in population control?
No, it came out with a dull, whiffling sound and instantly vanished at the time. Original paperbacks aren't reviewed in England so the readers just think they've been out for 25 years and don't bother writing letters about them. So it vanished in England, and in America it just went out as one more science fiction hardback and within one month all copies were *pulped* and then it went out as a paperback. So it was a sort of sleeper over the years. I did get the occasional letter about it over the years . . . one girl wrote and said that if she thought the world was going to be like that she'd commit suicide. And



"They're never going to make it into our economy. There aren't enough raw materials in the world for our own use much less theirs."

I did get one letter from a teacher of sociology who wanted to buy 50 copies of it to use as a text book in his classes. But this is the history of science fiction. You always get adequate sales but the world . . . the big world out there . . . doesn't realize that you're alive and warm until you've drawn their attention to the fact. Look at Kurt Vonnegut. He made a very good decision—for Kurt Vonnegut. His books all display a warning like on a cigarette packet: *This is Not Science Fiction!* But all his books are science fiction. He makes a mint of money but science fiction cannot make money. One of my books, *Captive Universe*, was short-listed for the Book of the Month Club but it was turned down because it was science fiction. That was the reason they gave. Not that they didn't like it or anything but simply because it was science fiction. The very next month *The Andromeda Strain* came out and they said it was not science fiction. My book was labelled as science fiction but *The Andromeda Strain* wasn't. There is this terrible tendency to label books that way. It affected *Make Room!* too.

It's hard to believe that you got so little response from *Make Room!*

I really get more letters from a serial sale to Analog. It depends if there is anything controversial in the book. You get nice letters from people saying they liked it but there's always somebody wanting to argue about something. The average Analog reader is a technician or trained in some branch of science, and if they see something wrong they quickly pick it up, especially if it's something violating their own particular field. I was living in Denmark when I did *The Technicolor Time Machine*, which was set in California. I had this guy going back to the Jurassic period and had him land on Catalina Island surrounded by an ocean full of evil life forms. And I thought, Christ . . . was Catalina Island there during the Jurassic? What do I do to find out in Denmark? But I went to a library and went through several books and I finally got a geology book that mentioned that Catalina Island was made of metamorphic rock. Thank God, I thought, it was there in the Jurassic. So the serial was published in Analog and I had a letter the next week headed The Colorado School of Mines. "Dear Mr Harrison," it said, "Yes, Catalina Island was there during the Jurassic period." Paragraph. "But a 100 miles inland from the sea."

How did the film of *Make Room!* (*Soylent Green*) affect the book?

It's affected the book in that I've resold it. Penguin Books in England has brought out a new edition and the publishers in New York have re-issued it. It was also re-issued in Germany, sold in Italy, and in France it was sold to a major publishing company which had never published science fiction before. Hopefully the latter sale will not only be good for me but for science fiction in general. If it makes money, that is. France is very bad about science fiction and they're very Francophile in their fiction buying. They print a few foreign science fiction authors but some they never touch at all. Hopefully, the film will mean the book will sell a lot more copies all around the world.

What did you think of the film?

Overall I think it succeeds as a film. I

think the worst part was the screenplay. It was hideously inept. It just qualifies as a second-rate mystery. But the other people who were involved, such as the director, the producer, the actors, the technical people were more aware of what the book was all about. The designer, for instance, had obviously read the book. He used all the background apparatus from the book, so in effect the film uses the old science fiction device of having the background as foreground. I never mentioned this world until about two thirds of the way through the book. Theoretically it's an adventure story you're reading but in the meantime the horrible reality of this world gradually becomes apparent and you realize that's what the book is about. It's the same with the movie. No one cares about the story, or what *Soylent Green* is—that's obvious from the beginning—what we're really looking at is that terrible world.

Why didn't you write the screenplay yourself?

The contract was very adamant about that. They wanted to buy the rights of the book, period! I was to have nothing to do with the screenplay, I was to sign the contract and then go away into the woodwork. I talked it over with my agent and decided to sign it because I wanted to become involved with the making of a picture. Of course afterwards I did pressure them. I wrote them a lot of nasty letters. I asked if I could rewrite the script and they said no. So I sent them little notes suggesting various things—such as: "Gee, what a fine script, but the reason you bought the book is because it takes place 30 years ahead and is therefore connected with today. People alive today will still be around, but for some reason, perhaps an oversight on the part of your scriptwriter, that fact has been eliminated. There is no connection with the present world at all." So they went and got Chuck Braverman to do that opening sequence with a series of stills. He did a real lovely thing there . . . he started with the pioneers chopping down trees, railroads being built etc, and just by using stills he built up to the opening scenes in New York. If I hadn't pointed that out they would have had the film opening right away in New York. But I made a number of suggestions that were never acknowledged. While re-reading the book I discovered I had invented about 40 new slang words but the scriptwriter didn't use one. Now slang is something that changes very quickly so there were surely going to be a lot



"The first book is always the one that gives you the most satisfaction. It's satisfying just to finish the damned thing!"

of unfamiliar words being used in 1999. I think they did put *one* into the screenplay after I told them about it. And I was on the set when they were filming the scene where the girl buys meat from the meatlegger and I saw on the side of the set a pile of plastic bags. Now the whole point of this thing was that there was nothing left of anything. So I asked where the bags were supposed to come from. Remember, I said, that there isn't supposed to be any petroleum left . . . and you make plastic out of petroleum. What little petroleum goes to the military and to make fertiliser. "Really?" they said, "We never thought about that." Well I did, I said, so throw them away. The girl brings her own bag to put the meat in, the way they do in Europe.

Did the movie have a large budget?

It was fairly big. Almost 4,000,000 dollars. It was well-budgeted, that was why it took them so long to do. I heard afterwards that the producer and the star, Charlton Heston, had wanted to do this film for over 5 years on a decent budget but MGM didn't want to do it. They both invested a good deal . . . they had a screenplay written and drawings of the sets made but MGM thought that the subject of over-population wasn't important enough. It wasn't until they came up with the twist of cannibalism that MGM finally thought they had a good, viable theme for a film, which gives some idea of how their minds work.

For Western, and in particular American, audiences the shock in seeing *Soylent Green* is the realisation that they may be one day living in circumstances similar to those endured today by people living in the underdeveloped countries.

That's exactly the point I wanted to make! I use Paul Ehrlich's term . . . not the "developing nations" but the "never-to-be-developed nations." They're never going to make it into our washing machine economy. There aren't enough raw materials in the world for our own use much less theirs. We're running out of copper and other things. When I wrote *Make Room!* America was the world's largest exporter of copper but now we're the world's largest importer of copper. It's happened just that fast. And frankly, in that book I didn't invent a thing as far as the reality of existence went . . . I used analogs that already exist. I've been in a lot of broken down parts of the world, such as Hong Kong harbor where they live on boats and never come ashore once in their whole lives. In the slums of Naples you can see the kind of life I described in *Make Room!* going on day in and day out. I didn't have to invent that reality, I only had to apply it to America and give a solid reason for it happening. That's why I think the movie succeeded in that it showed that world. Instead of driving the cars they were living in them. A very good device, eventually all we are going to have left in America are cars because most of the economy goes into the building and running of cars. I also had them breaking up freeways for farmland, another deliberate device to show that our national economy is wrong-headed . . . the world economy is wrong-headed. We need a balanced ecology. We cannot go on measuring our success by the gross national product of expansion. We can't keep taking it out, we've got to put it back

at the same rate or we go bust.

What did you think of the recent World Population Conference?

The whole thing was a balls-up. First thing is that they held it in a country which firmly feels that there *isn't* a population problem at all! And the countries involved are all so politically motivated. Politicians don't know or care about the problems of science, they can't read graphs or anything, and at that conference they were mainly politicians. Many of the Communist countries feel that they need an expanding population so that they will have more power in the world and it won't be until they go bust that they'll realise the world has too many people. None of them at the conference really looked at the realistic picture of the situation, they were all nationalists playing politics. And of course the Catholic Church is still the biggest power for evil in the population problem. I was aware of this when I was writing *Make Room!* but I very carefully didn't put in any anti-Catholic propaganda. They work hard against every conceivable intelligent effort to do anything rational in controlling population, instead they pull down this curtain of irrationality and absolute nonsense . . . and there it is.

Are you hopeful about the future?

There are hopeful signs in the future. We muddle through, or go bang. The hope lies in the fact that we have these immense resources—intellectual and physical—and when the crunch comes we might muddle through. We won't just die out overnight. You don't die if you don't have a washing machine or an air-conditioner, you're just more uncomfortable. That was emphasized during the gasoline shortage last year—all of a sudden you couldn't drive everywhere and you couldn't fly everywhere and everyone suffered—or thought they did. But the people who are really suffering because of the oil shortage are the poor Asians who now have to pay double the price for their fertiliser. In the years to come the Western nations will become more uncomfortable but the deaths, the plagues and the other horrors will happen in the "never-to-be-developed nations." We'll get by but we won't have our toys anymore, that's all.

Returning to the subject of science fiction, what are your feelings about the field these days?

In a sense, what I write and what I enjoy are completely different. What I



"I don't subscribe to the belief, as some people do, and as Harlan Ellison feels, that their corner of science fiction is all there is."

write most of the time, with rare exceptions, is what the British call "solid-fuel rocket science fiction"—where all the pieces meld together and you extrapolate a new world, but I enjoy reading almost anything at all. I am glad of the fact that we have in the field people like Tom Disch, Barry Malzberg, Norman Spinrad. I'm also glad that Mike Moorcock came along and did *New Worlds*. Ninety percent of it was unreadable, and Mike himself will agree with that, but in publishing all that garbage residual nuggets of gold fell out and changed the entire field. I'm very happy about that but I will not say that *New Worlds* is all there is to science fiction. I don't think Mike ever said that, he's a hard core science fiction fan himself. I mean, when I first met him we were both writing comics for Fleetway Publications. He's been around, and he knows what he's doing. He felt, correctly enough, that the field needed shaking up and so he shook it up. But I don't subscribe to the belief, as some people do, and as Harlan Ellison feels, that their corner of science fiction is all there is. Now Harlan was a great fan from way back, he loved science fiction—he still loves it—but now he is doing his own thing. Fine, but that's not what science fiction is about, that's not the name of the game. It's fun, it's good literature, but basically what keeps the whole thing thundering along and what provides the prime motivation behind science fiction is the awareness of being able to *change* change! Science has changed every aspect of our lives and you've got to be aware of that.

Do you think your own material, and the stories you choose for your anthologies, represents good science fiction?

As I say, what I write is one thing and what I edit is another. My tastes are far more catholic than what I edit. Dinosaurs like Sam Moskowitz accuse me of being a little bit Left of the Communist party science fiction-wise and people of the avant-garde consider me to be reactionary. But neither appraisal is correct, of course. I can define science fiction only as a purely literary endeavour called science fiction. It's a new thing in the world and you've got to point at it to show what it is. My Year's Best anthologies are received very well in the universities and by general readers but they are always reviewed badly in the fan press. The fans can't understand why I am not still printing the same old hack plots over and over again, the only things they seem to really enjoy. It's very simple, I just print good stories of any kind. I have one criteria—I want well-written stories, I don't demand literature with a capital "L". I feel there's room for everybody's kind of story providing they are adequately written. But there are those who are against this sort of thing. Moskowitz is a perfect example—as far as he is concerned anything written since 1925 is no good. I'm speaking critically now—these people are friends of mine but as Jim Blish says, there are no friends in criticism. Now I am very much against what we can call, for want of a better term, the "Clarion" school of writing which is affected by only a few writers. If they had a more general group of writers teaching at Clarion it might be better. But at the moment they all come out in one whining tone of voice, a thin shrill of self-indulgence . . . that's all they

teach there. I'm not against the idea of a writing school where you're exposed to people you know and respect and have the opportunity of asking them questions . . . it does you a lot of good. I learnt a lot about writing by talking to other writers.

Clarion's teaching methods do seem to be a little bizarre.

It's like being in an army camp. But if you want fascist type methods, if you want to be browbeaten—fine. If you want to put up with it—fine. I don't know how it got that way, perhaps it was Harlan Ellison's influence, because he believes in pushing things very, very hard. I don't know how destructive these methods are for new writers . . . if anyone wants to write he will eventually, no matter what happens. Most of the writers who teach at Clarion I've anthologised at one time or another, with the exception of Joanna Russ, so I'm not against what they write. But I am against the idea that theirs is the *only* kind of science fiction to write. Offhand I would say that theirs is the only kind of science fiction *not* to tell young writers to write. Writers tend to be self-indulgent anyway and the empty-of-content stream of consciousness kind of science fiction they promote you should only get to after years of labor, maybe, but not at the beginning. You've got to get some sense of the old values before you can break them. I really feel that a writer, when he's learning how to write, should have a beginning, a middle and an end to his story. You've got to know the rules before you can break them. Later on you can abandon these values. I'm also against Milford too, but that's a little different. That's where writers who are established in some way go along, by invitation only, and pass their manuscripts around and talk about them to each other. It can be fairly constructive, I suppose. I know a lot of established writers who like it. I've been to one and I was horrified. I went straight out the door.

What was wrong with it?

Well, as a professional editor I found the criticism all rather unimportant. There are two separate skills—writing and editing and if you can do one it doesn't mean that you can do the other. The criticism they were extending to each other at Milford wasn't really relevant to the story in most cases. They were just personally reacting to stories and this is a big mistake. Editing is something you learn, it takes years to do and is as hard to learn as writing. There are very few good editors, just as there



"Science fiction is still basically entertainment. Unless you do a good story, you're not going to sell it."

are very few good writers. I admire good editors. John Campbell was the best one in the world to work with. He rarely if ever made you change a story—a short story he would buy or reject—he would never talk about it, but he was a great man to collaborate with on a novel. I used to send him an idea for a novel and I'd get back a 14 page letter outlining things that I hadn't even thought about. He would add to your work.

How did you get on with Campbell personally?

He was a grand man, and a very good friend. He would come on strong and everything but basically he was very warm-hearted and very kind. A rather complete person in the intellectual sphere but emotionally it's hard to say. You never got that close to his personal life though he would extend the hospitality of his home to you. He would lavish hospitality on his writers and his friends, plenty of food and drink, etc. but he would also provide you with the hospitality of his intellect. He'd send the traditional 14 page letters to writers he'd never heard of . . . he'd get a story from someone he'd never heard of and back would go one of those letters. He *did* have simplistic ideas about politics but he was not a fascist. If anything he was a technocrat. Technocracy was a big movement in the 1930s and I think it's still alive. Technocracy simply says that the engineers are better chaps than anybody else and they can do anything so why don't we just get rid of the politicians and let the engineers run everything, which is a pretty awful idea when you think about it. Stories like *The Roads Must Roll* were pure technocratic propaganda—the evil unions are causing trouble but are knocked out by the fine, upright engineers who take over, simply because the roads *must* roll! But Campbell was a lot of other things as well. People have become fixated on one little part of his personality but he was open to argument all the time, and he was true to his own beliefs. For example, he asked me to edit that collection of his editorials that Doubleday published—it took me 4 years to do that! I had to read every one of his editorials and choose 80,000 words out of 2,000,000—and I discovered that they were no more right-wing than they were left-wing . . . they were no-wing. Earlier on when we had talked about it he had said that I was the editor so the choice was entirely mine. Well, finally I sent him a type-list of the contents and he wrote back and said fine, but had I considered one particular editorial, "The Mobsters," which was about the causes behind riots. And I wrote back and said yes, I had read it but I felt that it doesn't do you much honor. It simply said that all riots in the world were caused by communists, every single riot everywhere, which is a little on the fantastic side. He came back with a long letter about why he was right, and he said—"You know the Chief of Police of Birmingham said it was a very fine editorial, and the Chief of Police of the Canal Zone said it was correct?" And I wrote back saying—"Christ, *they* would, wouldn't they?" And this went on for a long time back and forth between us and it was getting nowhere. The letters were getting longer and longer—I was getting 20 page letters from him. So finally I wrote a 1 page letter and said I'm sorry John, but I just disagree. If

you want to include this editorial in the book, fine, but my name won't be on the cover. And he wrote back in one line saying—you're the editor. Forget it! And that was that. If I'd said it earlier he would have stopped arguing.

Weren't you considered as a possible replacement of Campbell as editor of Analog?

Yes. He asked me two months before he died. He said he wasn't going to live forever, and I said—God, you have to live forever! He asked me and he asked Poul Anderson at various times to take over the editorship of *Analog*. I turned it down on the basis that I thought *Analog* was his magazine and should terminate with him, plus the fact I would have had to live in New York and I hate New York. But I think Ben Bova is doing a fantastic job. He's keeping the old readers and getting new ones. So bully for him, but I would hate to edit a monthly magazine. One of the reasons I'm in Europe at the present time is that I'm giving up editing. I want to get back to writing again. Editing is a tremendous drag on your time—writing and editing don't mix very well—so I'm trying to get rid of all this excess labor and get back to writing novels again. That's what I enjoy doing the best.

How do you feel about Campbell's rule that good science fiction should be essentially upbeat?

This didn't always apply. If you gave him a good story, even if it was downbeat, he would print it. He printed one of mine, *Criminal Act*, which was a very black story but he printed it because it moved along and made sense on a certain level. But science fiction is still basically entertainment. Unless you do a good story, and do it well, you're not going to sell it. As for being upbeat, well you cannot lay out a black and white blueprint for the future which everyone has to stick to. And anyway, out of black stories may come good ideas. If the stories paint a really horrible picture of the future they may provoke people to actually do something to prevent that future from happening.

Are you an optimist or a pessimist?

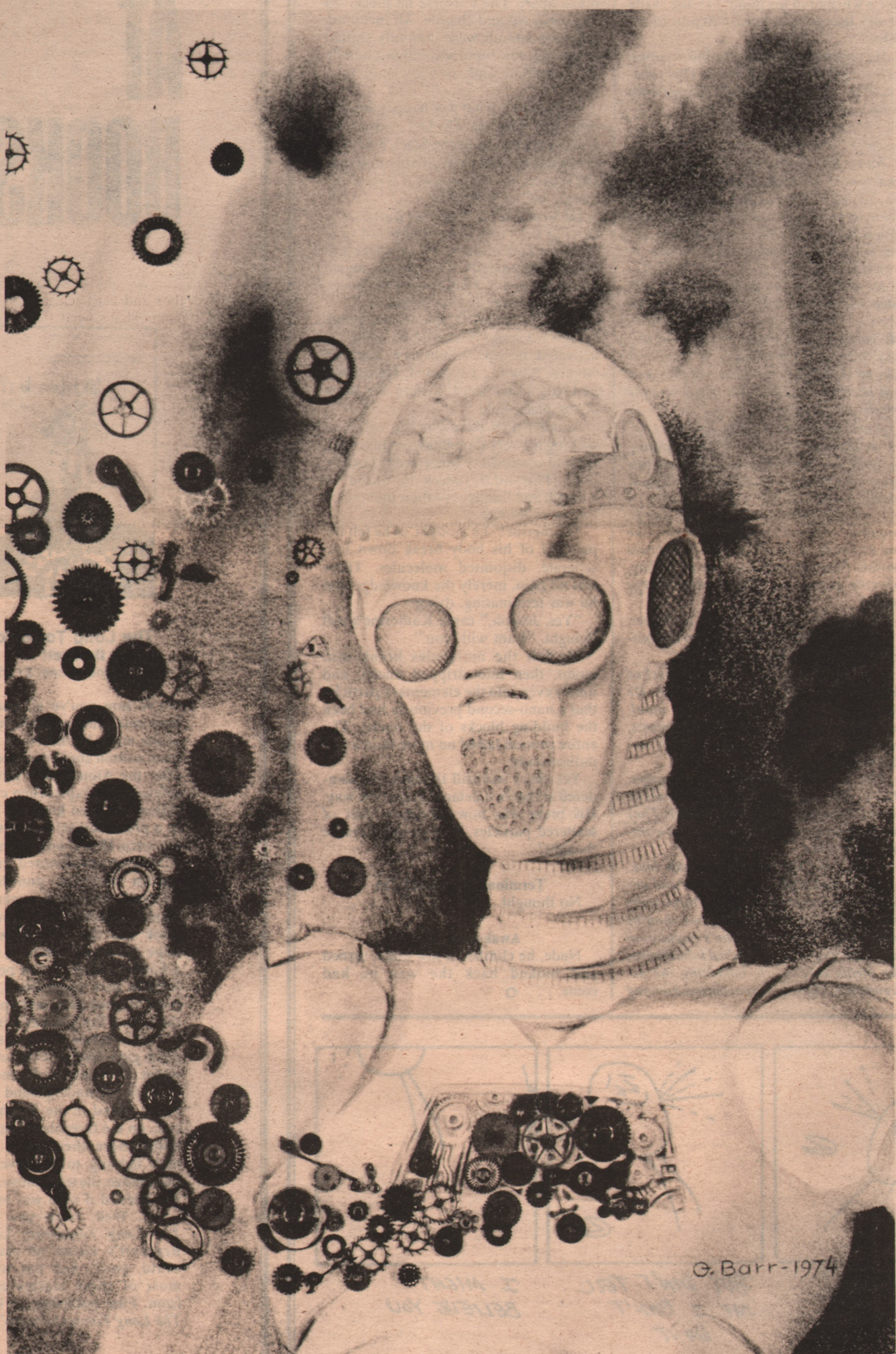
Neither, I'm a realist. You have to look at the facts. I do, so I end up writing very dark books like *Make Room!* and I get so depressed I write humorous books like *The Stainless Steel Rat* just to cheer myself up. The whole world needs cheering up. ○



"And of course the Catholic Church is still the biggest power for evil in the population problem."

fiction/ALBERT C. ELLIS
 artist/GEORGE BARR

TERMINATION ORBIT



Subspace—000:00:000

Grayness. But not grayness. Non-color—not white, not black. A total dun negation of shadow and light.

No shape. An infinite, tedious expanse of featureless nothing. Absolutely no sensory stimuli.

No time. No thought.

Breakthrough—000:00:001

A fire-burst of stars.

Awakening—000:01:231

Slowly, memories crept around the edges of his mind. He felt them building just outside his perception, waiting to enter his consciousness, to initiate thought. They came in flashes and, sometimes, staccato bursts. Some floated in like soft, billowing clouds. Others entered with the cutting edge of surgical knives.

NAME: RAYNE, JOSEPH C.
 RANK: COMMANDER, DEEP
 SPACE SURVEY UNIT
 SERVICE DESIGNATION:
 XDSP 26

The memory was painful. It contained some soft elements, but the basic tone was hard and cold. The computer information overshadowed the more human quality of his identity. The memory forced its way in, filed itself. Rayne had nothing to do with the process; it was completely automatic.

Joseph Rayne was designated XDSP 26. Equipped with space/subspace interface circuits and highly sophisticated survey and analysis lobes, he was the twenty-sixth number in the latest series of experimental deep space probes. He was a creature of space.

Rayne's body was a sleek cylinder of ultra-strong alloy, perfectly adapted to gather, process and transmit back to Earth data on the physics of deep space. His heart was a small nuclear reactor. His senses were high resolution television cameras, infrared scanners, x-ray and neutrino counters, multi-band radio receivers and a myriad of other electrochemical detectors. The sensory stimuli by which he perceived the universe were the ejected refuse of billions of stars—some ancient beyond time, others in the womb-throes of fiery birth.

But these were not the elements for which he longed. He wished to be on a planet almost ten kiloparsecs distant, a world from which he was eternally banned. Never again would he feel Earth's cool breeze on his face, taste her salty sea spray. Forever gone were the silent nights on the beach, the orange and yellow sunrises.

Another memory slashed into his mind:

OPERATIONAL ORDERS:
 XDSP 26 CONFIDENTIAL
 TELE-COMM BROADCAST
 SECURITY: TIGHT
 BEAM ALPHA

To Rayne, communication was life, his only link with reality, and he knew that without it he would die.

PRIORITY
TRANSMISSION TIME: 060315Z FEB 2123
FROM: COMMDR IN CHIEF, DEEP SPACE SURVEY FLEET
TO: XDSP 26
1. DEPART LUNAR ORBIT B-43 080015Z FEB 2123. CHECK OUT ALL SURVEY AND ANALYSIS SYSTEMS AND PROCEED VIA VECTOR 594 TO ARRIVE INTERFACE STAGING AREA 3 APPROX 100015Z FEB.
2. UPON ARRIVAL STAGING AREA 3, CONDUCT SPACE/SUBSPACE INTERFACE TRANSIT. TIGHT BEAM ALPHA TELE-COMM BROADCAST TO SUBSPACE NAVIGATIONAL COMPUTER WILL FOLLOW THIS TRANSMISSION.
3. UPON SUBSPACE/SPACE INTERFACE TRANSIT, CONDUCT SURVEY OF X-RAY SOURCE CYGNUS X-3. INITIATE PSI-COMM LINK NO LATER THAN 5 SECONDS EARTH STANDARD AFTER INTERFACE TRANSIT. REMAIN IN OPERATIONAL VICINITY CYGNUS X-3 APPROX 5 HOURS EARTH STANDARD.
4. UPON ELAPSE OF OPERATIONAL TIME, ACTIVATE SUBSPACE NAVIGATIONAL COMPUTER AND CONDUCT SPACE/SUBSPACE INTERFACE TRANSIT.
5. UPON SUBSPACE/SPACE INTERFACE TRANSIT, DEPART INTERFACE STAGING AREA 3 VIA VECTOR 873 TO ARRIVE LUNAR ORBIT B-43.
6. AWAIT DOWN-SYSTEMS DEBRIEFING.

Observation—000:03:715

X-ray source Cygnus X-3. The raster scan of Rayne's television eye raced across the synthetic synapse, projecting the image directly into his visual cortex. The binary star system loomed monstrous in his mind. The visible component of the pair was a blue supergiant, spectral class B0-Ib. Its mass was thirty times that of Earth's sun.

But it was the invisible companion, the dark sister, that interested the Survey Fleet, that had brought Rayne so far from Earth. It could be detected only by its efforts on the gaseous star. A black hole, the object was the dominant component of the system. It sucked the material of the visible star into a rotating disk of ionized plasma. The violence of transfer and the shredding action heated up the atoms being drawn out of the visible star until they emitted x-rays near the black hole. Thus had the black hole in Cygnus X-3 indirectly revealed its presence to Earth.

Rayne gave a short burst on his compressed CO² jets, placing himself in orbit around the system. The orbit contained as small a decay factor as possible, but it was still high risk. The gravity well of the black hole forced a gradual spiral inward. He would have to watch the rate

of decay closely and correct the orbit when necessary.

Information flooded into Rayne's mind from his sensors. Radio level: 0.131 flux units. X-ray count: 85,000 counts per second. System periodicity: 4.8 hours. Black hole mass: ten times solar. Black hole density: 10¹⁶ grams per cubic centimeter. Black hole diameter: 14.7 kilometers. The figures and parameters flowed endlessly.

Transmission—000:04:950

Rayne initiated psi-comm link. "Katherine," he thought.

"I am here, Joseph." The thought was like a whisper in his mind, like the rustle of dry leaves in a wind. "Ready to receive."

He began transmitting the information as fast as it entered his mind. This process, too, was automatic. It required no conscious thought.

memory

Nude, he climbed a low dune, turned and looked back the way he had come. To his left the ocean, its waves lapping gently at the beach, taking the white sand slowly back into itself. To his right nothing but sand, low dunes like the one on which he stood.

He slid down the dune to the water's edge and looked out to sea. A cloudless sky met the water out there, somewhere. He could not tell where the horizon line was; sea and sky blended perfectly. There was no sound but the whisper of the clean salt breeze blowing off the ocean and the gentle hiss of waves.

Again he looked the way he had come. In the distance, following his meandering footprints someone approached. There was something familiar about the other's slow, almost aimless walk.

As the figure drew near its shape rounded, softened. It was a woman—she too was nude. A small figure, lithe, almost boyish. Short brown hair cut in a shag, piercing green eyes. She carried a large basket.

"Katherine," he said, almost a whisper.

"Joseph." She smiled, held up the basket. "A picnic?" He nodded.

They spread a red and white checked tablecloth on top of a nearby dune. He sat quietly as she prepared the meal, watching her sure, smooth movements, enjoying the beautiful twists of her nakedness.

The food was good, he was hungry. Thick slices of lean ham, potato salad, cherry-tomatoes with salt, cold beer. They ate in silence—watching each other, wanting each other.

Later, after the meal, they made love.

Rayne had signed his contract and entered the psi reservation almost three years ago. Katherine had arrived two months before him. The reservation's population was kept close to one hundred inhabitants, the births very nearly balancing the assignments. Mating was encouraged among

the inhabitants.

It was a good life. They were permitted run of the reservation and allowed to do almost anything they wished, as long as it was not overly dangerous. The only interruptions to their life in paradise were the psionic reinforcement sessions.

Katherine was Rayne's psionic complement. They would grow old together. They would be assigned together. They would become immortal together.

Danger—240:02:215

A tidal wave ripped through Rayne's strong metal body. His constituent parts vibrated with the force, threatening to break apart. The universe he perceived was confused and chaotic. All incoming radiation stimuli were infinitely shifted to the red. His sensors could not handle the overload and, one by one, they failed.

Rayne knew what was happening. His orbit had decayed. He had crossed the first event horizon of the black hole. But he should have been warned before this. His sensors should have told him of the danger before it arrived.

He wondered if time was warped this close to the black hole. At his last time check he had been out of subspace just under five seconds. The danger signal had registered at a little over four hours. He had lost nearly four hours.

Rayne fired his CO² jets, tried to break his inward spiral. They did no good. He activated his space/subspace interface circuits. Nothing happened. He continued to spiral inward, toward the heart of the black hole.

Another tidal wave tore through him, shaking the very thoughts from his mind. He had crossed the inner event horizon now. The tidal forces mounted in strength and frequency—their theoretical limit was infinity.

"Katherine!" he thought, as he felt the material of his body break down into separate, disjointed molecules. There was no pain, merely the knowledge that he was terminating, dying.

"Yes, Joseph," came Katherine's soft thought. "I am with you."

He felt the molecules break into atoms, then into stripped nuclei, and finally even into the elementary particles that a nano-second previously had been the building blocks of the nuclei. The entire process lasted no more than a few milliseconds.

Yet, there was still thought. He wondered at that in a detached, analytic way. His brain was now merely a mist of scattered particles. How could there be thought?

Termination—240:02:216

No thought.

Awakening II—00

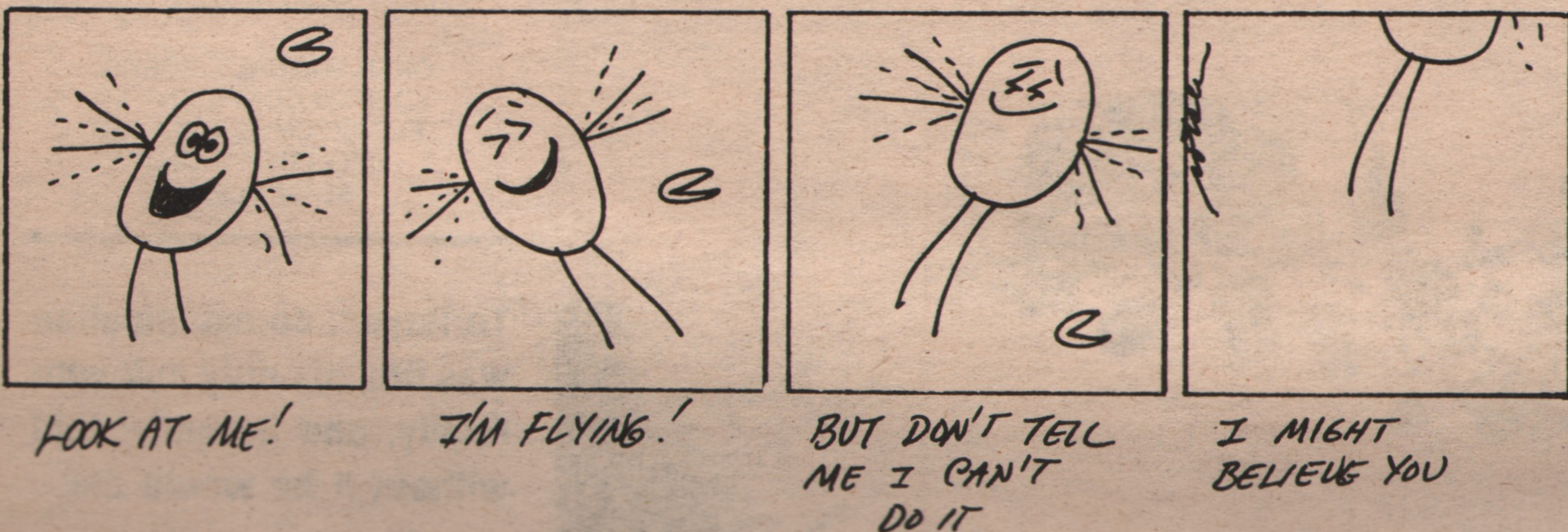
Nude, he climbed a low dune, turned and looked back the way he had come. . . . ◊

VERTEX LOOKS AT BOOKS

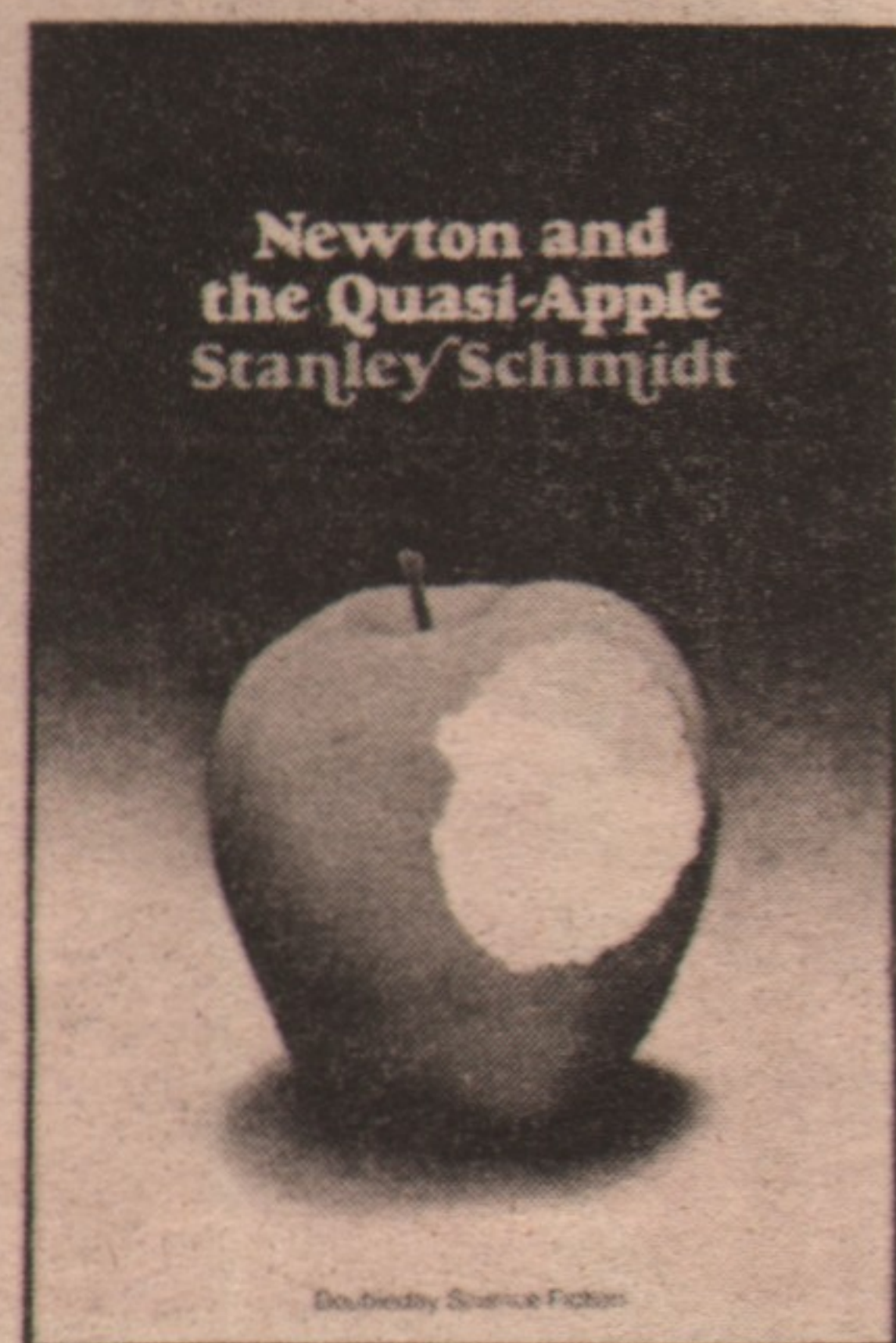


The Long Tomorrow
Leigh Brackett
Ballantine Books, \$1.25

We're sure you've all read at least one, and possibly more, of the many books which have been written about the time just after the Atomic War (always referred to in caps) when civilization has been knocked back to a pre-industrialization state, say circa 1850's, and science is a religion-condemned crime against humanity punishable by death. When cities were illegal and dependence upon the Book was the only allowable hope for man's conquest over a hostile nature. When people lived in dark superstition, and there seemed to be no hope for the future. But you knew it was a science fiction book, and the good guys had to exist somewhere. In a cave in the mountains, in an underground city, on an island in the South Pacific, on the Greenland ice cap. Somewhere there were still men fighting to preserve the knowledge, the technology, that was needed if man was to advance. Well, when you read *The Long Tomorrow*, Leigh Brackett's vision of such a world, you'll find out where most of those stories came from. First published in 1955, *The Long Tomorrow* wasn't the

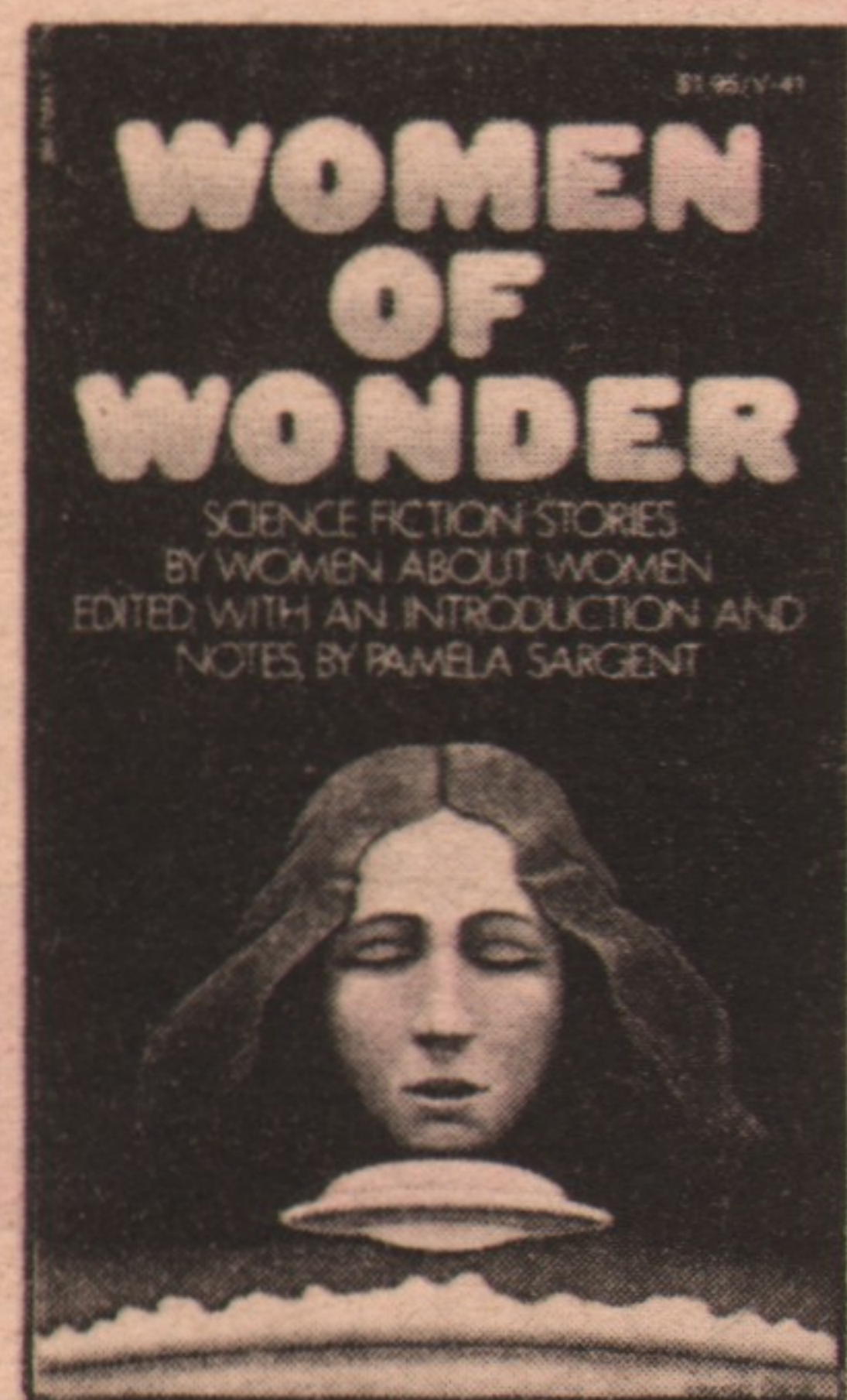


first book with that plot line, but it was the best, the definitive study of such a society, and quite frankly most of the other stories of the genre which came afterward don't hold a candle (electric lights forbidden) to the original.



Newton and the Quasi-Apple
Stanley Schmidt
Doubleday, \$5.95

Stanley Schmidt, an assistant professor of physics who has been writing pretty good science fiction for quite a few years, evidently started out to write a fantasy novel. What else would you call a book with characters named Terek and priest-king Kangyr, who live on a planet named Yngmor and are threatened by ferocious sea pirates? But all of a sudden Schmidt throws in a couple of real live earth-type humans, meddling away as earth-type humans always seem to be doing in books about backward planets, and what started out as fantasy becomes strangely oriented science fiction. There's some humor in the book, a lot of action, some spots of moral questioning and questioning, and a look at the roots and causes of modern day physics. And, above all, once you get over the shock of finding out that this fantasy book is actually science fiction, there's a lot of reading enjoyment.



Women of Wonder
Pamela Sargent, Editor
Vintage Books, \$1.95

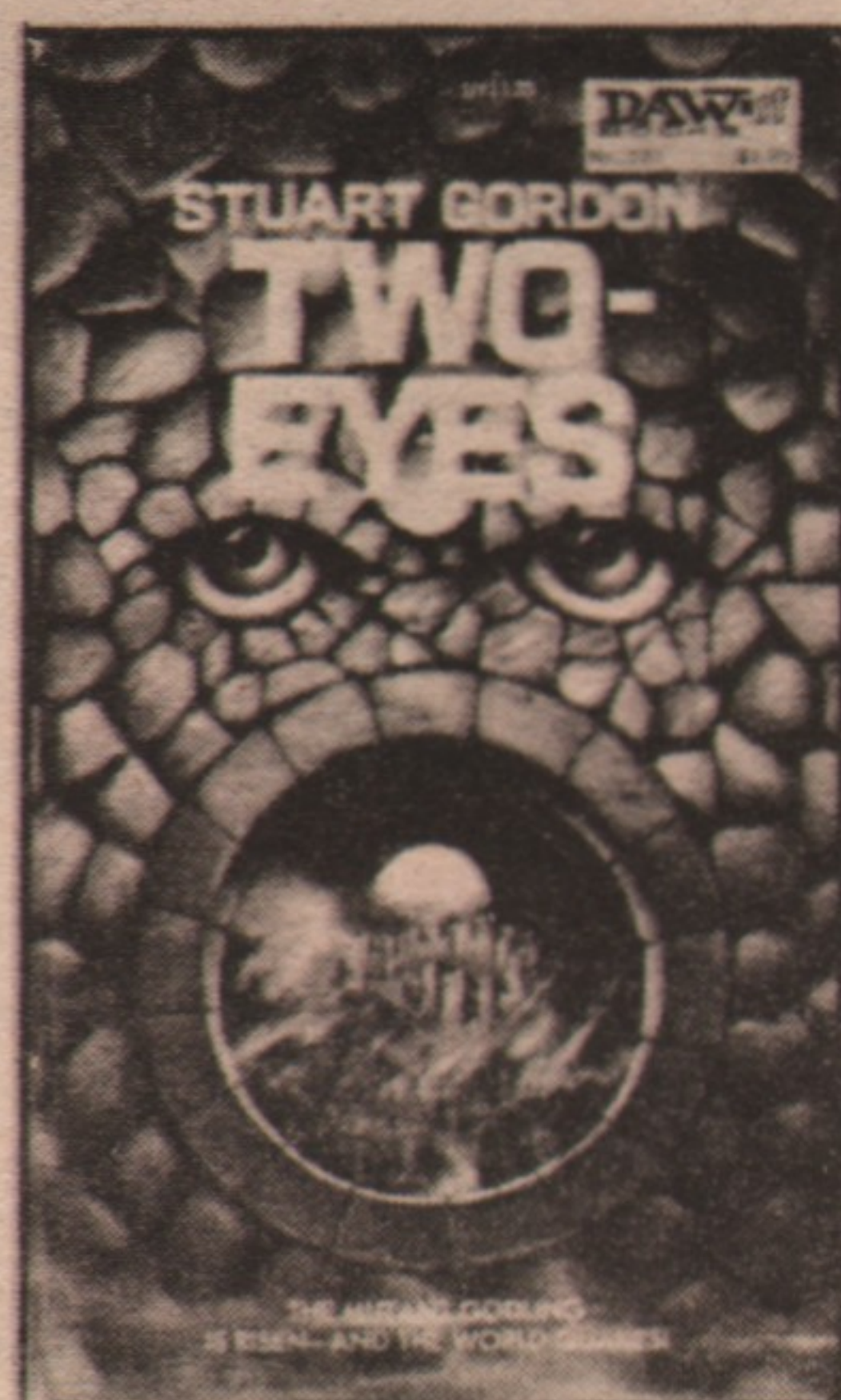
Women of Wonder is presented as a book of science fiction stories by and about women—obviously intended as a major

incursion of women's lib into science fiction. Unfortunately, for us at least, it has exactly the opposite effect. What this book seems to be saying is, "we need our own book, a book of women's science fiction." Which seems to us to be an admission that the stories can't make it it *general* science fiction. And a look at the names on the table of contents will tell you that this is definitely not the case. Included are Judith Merrill, Katherine MacLean, Marion Zimmer Bradley, Anne McCaffrey, Sonya Dorman, Kit Reed, Kate Wilhelm, Carol Emshwiller, Ursula K. Le Guin, Chelsea Quinn Yarbro, Joanna Russ and Vonda N. McIntyre. And those are twelve writers who don't have to take a backseat to anyone in the field. They're not just good women writers. They're good writers. Period. The stories in this collection are, again in our opinion, not the best—not even representative of the best they can do, although there are some good stories, notably Chelsea Quinn Yarbro's *False Dawn* and Joanna Russ' *Nobody's Home*, but taken as a whole, this book, and the premise behind it, seems to be a slap at these fine writers, and women writers everywhere.



The Science Fiction of Isaac Asimov
Joseph F. Patrouch, Jr.
Doubleday, \$6.95

Dr. Patrouch, an associate professor of English at the University of Dayton, has taken on quite a job in this book. What amounts to a definitive critical examination of the science fiction of Isaac Asimov, from his early short stories in *Astounding* to the Hugo-winning *The Gods Themselves*. Dr. Patrouch makes no secret of the fact that he is an admirer of Asimov's writing, but despite this he is able to bring a commendable objectivity to his study. In covering such diverse works as the robot stories, the Foundation series and the Lucky Starr novels, Dr. Patrouch shows the recurrent themes, the abilities and liabilities in writing which point to traits of character and behavior in the writer himself. A thorough and well-written book which should be on the shelf of any fan of the works of Isaac Asimov.



Two-Eyes
Stuart Gordon
DAW Books, \$1.25

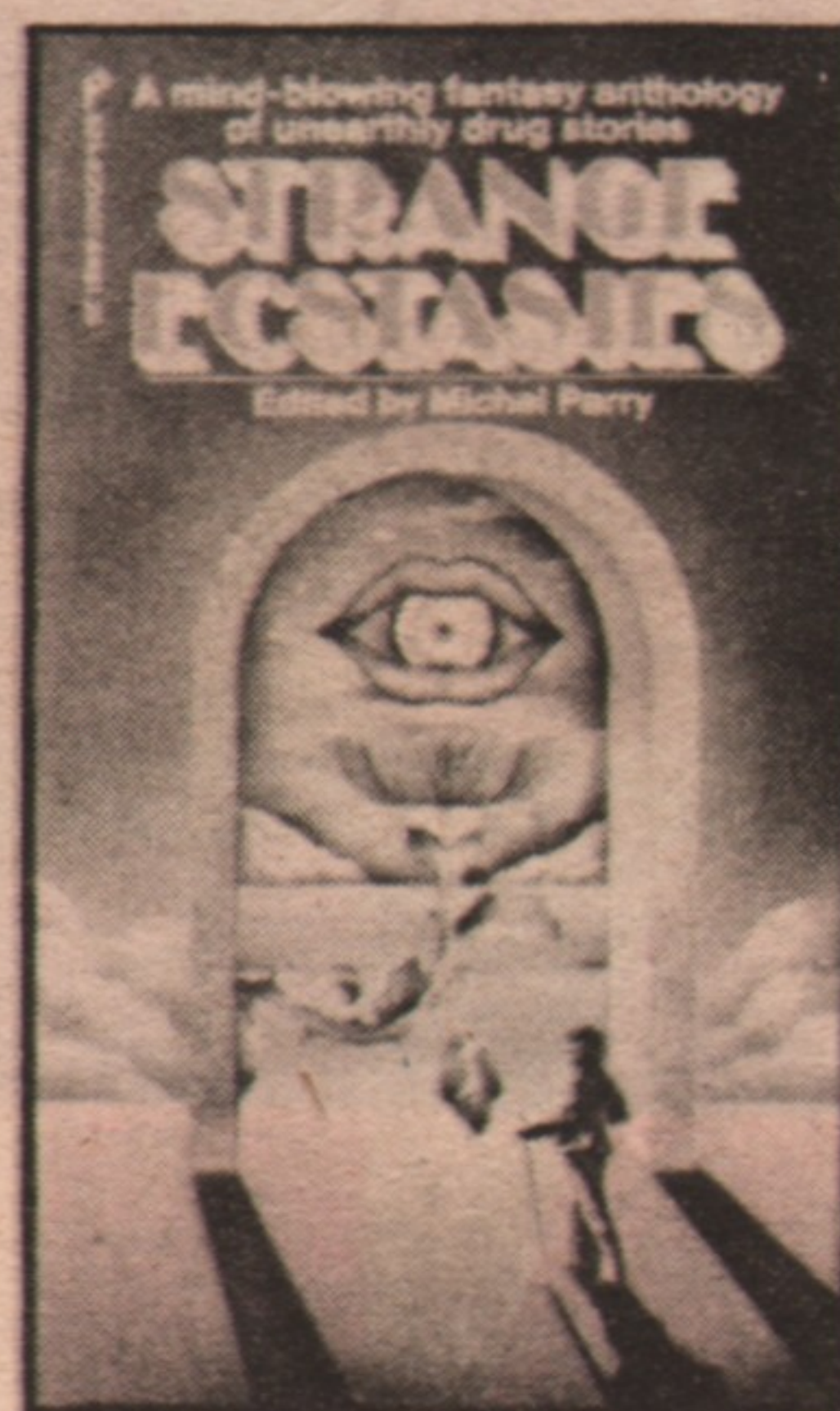
Two-Eyes is fantasy, and it doesn't pretend to be anything else. And it is good fantasy, well written, the story of the Second Coming, this time by the Devine Mutant. The world presented by Gordon, a world as it exists long after the destruction of our present world, is rich and colorful and well detailed. Not a mere sketched-in background for the characters to move against, but a complete painting of an alternate to the future imagined by most "hard" science fiction writers. And it is in building this future world that the talents of Mr. Gordon are shown off the greatest effect. The characters, the plot line, the story, the twists and turns of action—all seem vaguely familiar. Those elements, taken together, give the feeling of a variation on a theme—the theme of standard future-world fantasy. Well, done, but nothing really new there to excite the imagination.



Astounding
Harry Harrison, Editor
Ballantine Books

When this book was released by Random House in hardcover something over a year ago *Vertex* reviewed it and called it one of the most important anthologies of the year. The intervening time, and a rereading now in paperback, has not changed our opinion. The book is a salute to John W. Campbell, Jr., who became editor of *Astounding Science Fiction* in 1937 and remained at that post until his death in July, 1971.

During those years he "discovered" most of those writers we now call the "masters of science fiction." Men like Robert Heinlein and Poul Anderson. And during those years he molded science fiction to his own personal concept of it, and built the framework for the heights science fiction is reaching today. After his death a final tribute to Campbell was planned. This book. In it are new stories, written in the Campbell tradition, by men who were most closely associated with Campbell and *Astounding*. In essence, it's a final issue of *Astounding* as John Campbell saw it. It starts with a cover from the October 1953 issue of *Astounding* by a then new artist, Kelly Freas. And inside are stories by the men who knew Campbell and *Astounding* best. Poul Anderson, Isaac Asimov, Alfred Bester, Hal Clement, Theodore R. Cogswell, Theodore L. Thomas, L. Sprague de Camp, Gordon R. Dickson, Harry Harrison, Mack Reynolds, Clifford D. Simak, George O. Smith and Theodore Sturgeon. The book is a work of love, and it shows on every page.



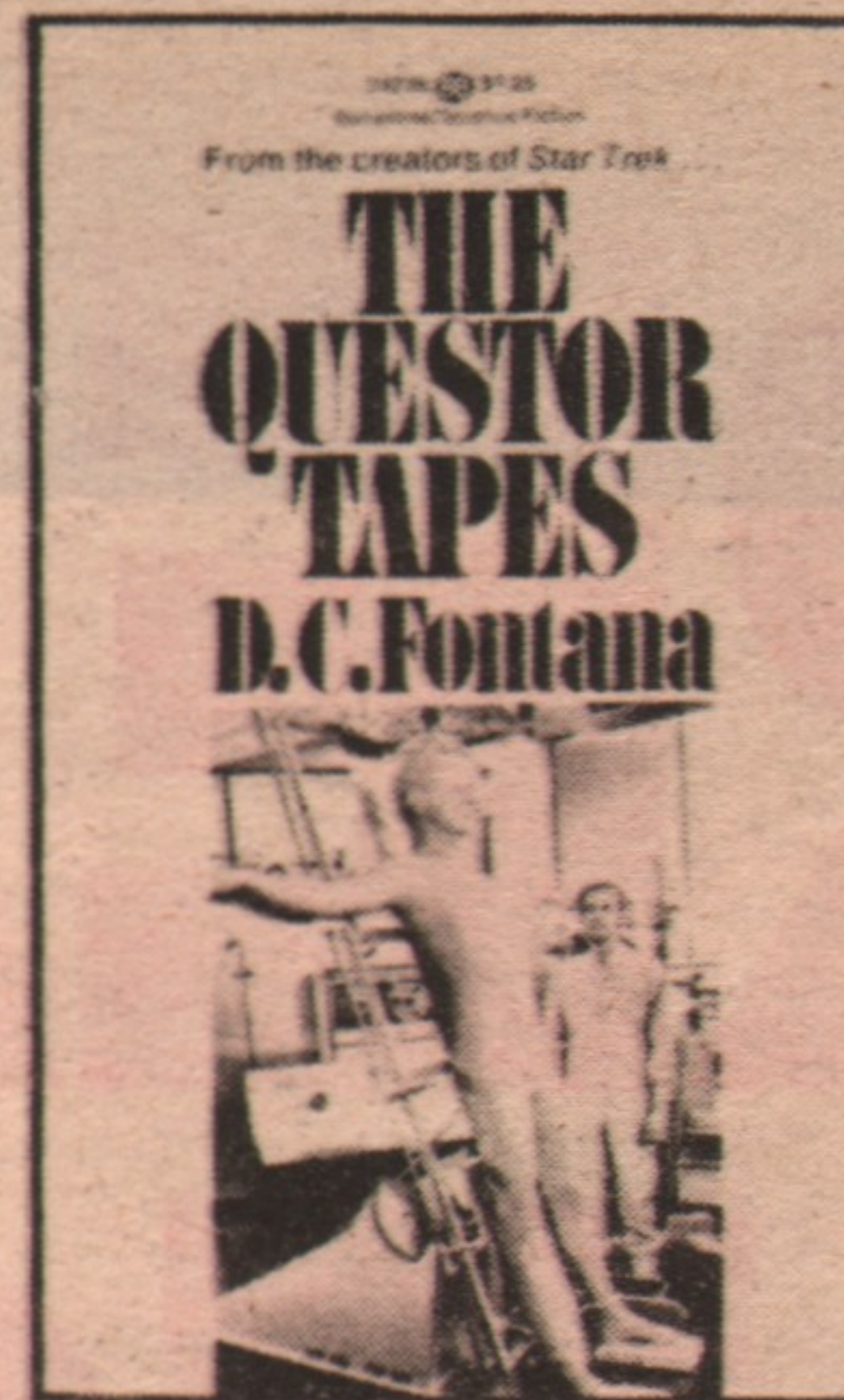
Strange Ecstasies
Michel Perry, Editor
Pinnacle Books, \$1.25

Here we are again with another collection of short stories on a theme, by authors ranging from H. G. Wells to Norman Spinrad. This has always seemed like a rather cheap way of getting another title on the market, but in this case not only are too many of the stories out of date, but the theme as well. Had this book been written five or ten years ago, at the height of the drug revolution, we're sure it would have been more pertinent—even if still a meaningless volume in terms of literary merit. For the central theme is mind expanding, usually through drugs, in science fiction stories. The idea seems to be if you can smoke it, drop it, inject it or rub it in your belly and get high, and if a science fiction story has been written about it, it belongs in this book. Unfortunately, where this book belongs is back in the file cabinet of dusty "available reprints" it came out of.



The Space Merchants
Frederik Pohl and C. M. Kornbluth
Ballantine Books, \$1.50

The Space Merchants was first published in 1953, and because of this some of it seems quite dated in 1975. Basically it's a story about the world of advertising in the future, when advertising is the world. Today we're less inclined to think of Madison Avenue and the Advertising Account Executive as the true wave of the future—unless you've read *The Making Of A President* and *All The King's Men*. Then you realize that, dated or not, The Space Merchants is still very relevant. But even if it wasn't, even if you don't see any danger in the concept of "hard sell, soft sell, but SELL," you'll find this book fascinating.



The Questor Tapes
D. C. Fontana
Ballantine Books, \$1.25

Gene Roddenberry, of *Star Trek* fame, wrote the story. Roddenberry and another *Star Trek* graduate, Gene L. Coon, wrote the teleplay. And now D. C. Fontana, for years the story editor for *Star Trek* and a regular writer for the series, has taken the story one step further. To the novel stage. Unfortunately for all concerned, the television pilot of The Questor Tapes didn't make it as a series, nor does the book really make it as science fiction. It's a good book of the chase and intrigue and adventure genre, with some science fiction elements, but there's more *James Bond* than *Star Trek*, more "stay-within-the-budget" than "let's-go-where-no-man-has-gone-before." ○

THEY HAD OR EVERY ITY, AND R CITY OF RE WAS PT

THE SLIME DWELLERS

fiction/SCOTT EDELSTEIN
artist/MONTE ROGERS

SHARTAR

He stood on the crest of a small hill, alone, looking across the long grassy area at the city. Sun gleamed off the metal dome enclosing one of the city's residential areas. Huge construction derricks hovered above the dome and above other parts of the city, waiting to begin the dismantling and the demolition.

Most of the city would be carefully taken apart, and the sections would be transplanted elsewhere, in urban and suburban areas that had grown up with little or no planning. Other sections of the city which had not been built from pre-fabricated units would simply be demolished, and the materials recycled and used elsewhere. To accomplish this demolition, many of the derricks were fitted with giant booms.

Shartar took his camera from its case and hurriedly took several shots of the city. He put the camera away and looked back across the grassy expanse at the huge metal structure. He saw some of the booms and hooks and electromagnets begin to sway. The tearing down had begun.

HENSHAW

"It's kind of small, isn't it?" the wrinkled, well-dressed woman said. "Don't you have anything bigger?"

"I'm sorry," Henshaw said, imperceptibly straightening his tie. "It's the largest model available. Six rooms is the maximum. One of the most important concepts of Basin City has been to make the best use of space."

"This room, I mean," the woman said. "It's not very big for a living room. The one we have back home is a lot bigger, isn't it, Rod?"

Her husband was a decaying, flabby man, with thick spectacles that made his eyes look huge. "Yeah," he said slowly, uncertainly. "Yeah, I think so."

She nodded her head slightly. Frosted hair bobbed up and down. "Show us the kitchen."

"Over this way, please." Henshaw led them through the low doorway into the kitchen.

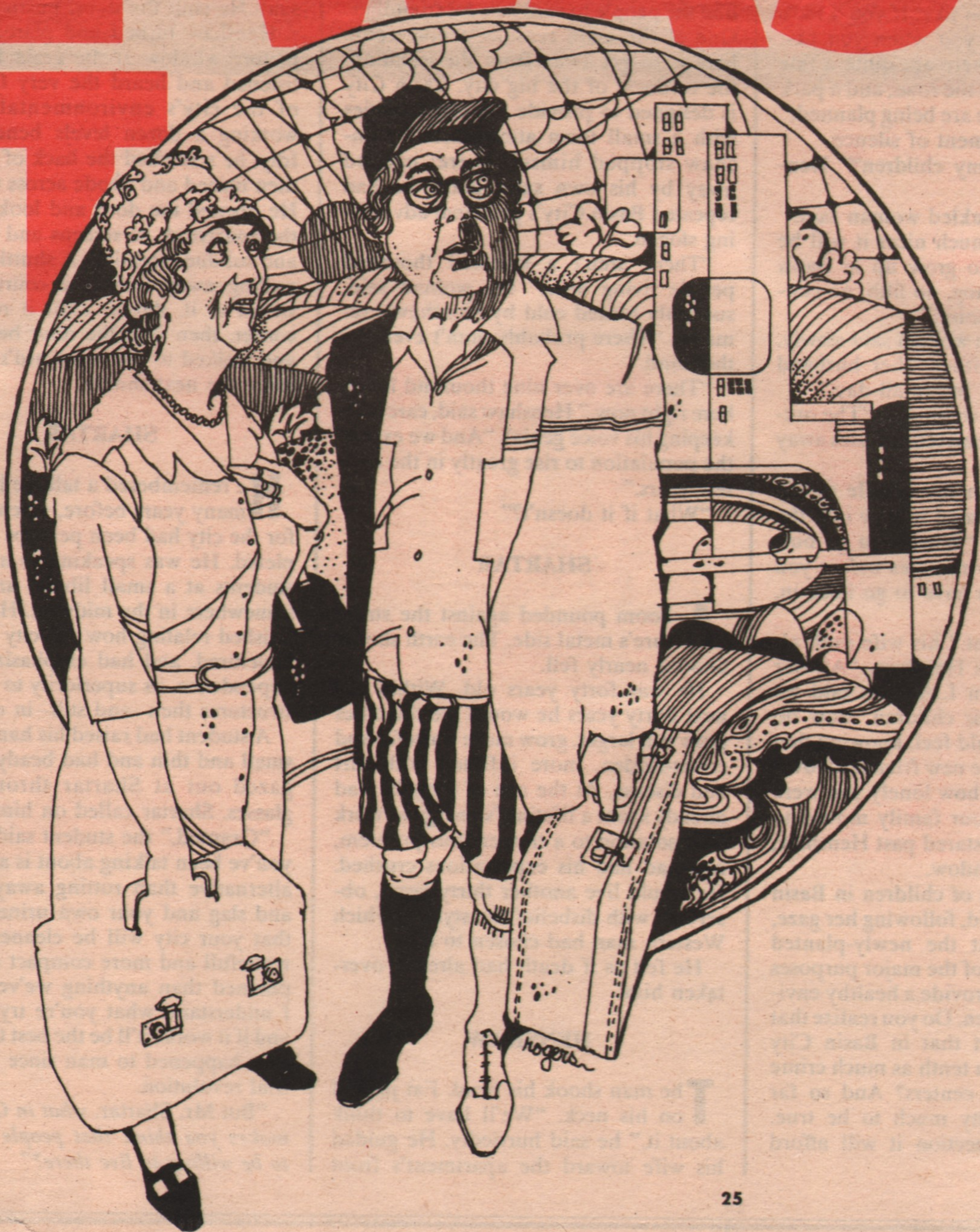
The couple stood just inside the doorway, surveying the room. "It looks pretty nice, doesn't it?" the husband said.

"I don't really like the way it's laid out," his wife said. "I'm used to the refrigerator being right next to the sink, not the stove." She turned to Henshaw. "I notice the stove's an electric. Are there any gas ones in the city? I like cooking with flame a lot better."

Henshaw shook his head. "All the appliances in Basin City are electric, as well as the climate control system and the recycling system. It's much less expensive than gas; all the electricity the city needs is generated in a big power plant underground."

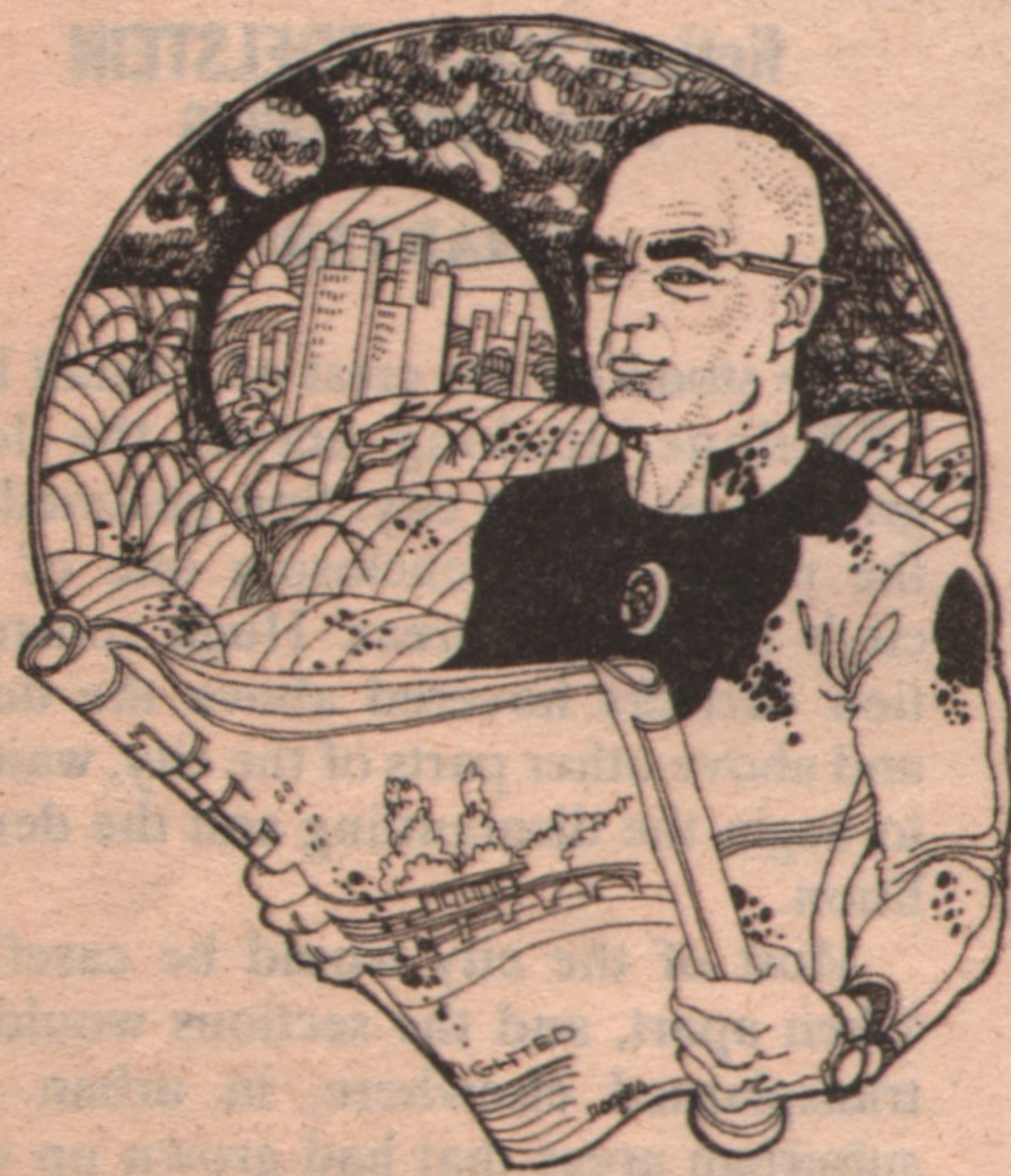
"What does the recycling system do?" the husband asked.

Henshaw strode across the kitchen, stopped next to five small metal drawers set into the wall. "Whenever you finish with what you're using, you just dump it down one of these chutes." He pulled open a drawer and a faint rumbling filled the room. "This drawer is for organic wastes—you know, rotten food,



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They had created more than just the perfect city. They had created man's only hope for the future. Unfortunately, man just wasn't interested in the creation, in the present or the future.



banana peels, apple cores, things like that. The others are for aluminum cans and containers, for glass, for plastic, and for paper."

The woman said, "What happens to those banana peels and things? They don't grind them up and make them into food, do they?"

"Of course not," Henshaw said. "They use them for compost."

"What's that?"

"Compost? It's used as fertilizer for the farms outside of Basin City."

"What about trash?" the husband asked. "Is there an incinerator in the apartment?"

"There's a central incinerator for each community," Henshaw said. "There's no need for an incinerator chute in each apartment. The only things that don't get reused are cigarette butts, used paper towels, things like that. You'll only have to take out trash one a week, at the most."

"Do all the apartments look like this one?" the woman asked.

"No, this is one of nine basic models. This is one of the most expensive units available, because of its size and location. As you can see, we're located on the next-to-top level of the dome, with what's probably the best view of the countryside in the whole city."

The woman walked tiredly to the picture window in the living room and looked out. "There's not much to the countryside," she said. "Just farms, and past that, desert."

"How much is this going to run us?" her husband said.

SHARTAR

The city had been his life's work. Appalled at the conditions existing in the growing megapoli, terrified by the prospect of the entire Eastern Seaboard becoming one giant, dirty, urban prison, Shartar had set about to create a livable city. He began with a degree in architecture and another in human ecology. He drew up the plans for the city over a period of seven years; designs for living units, recreation areas, cultural centers, laboratories, industrial areas, gardens, all fitted together into a huge mechanical gestalt.

He had supervised every step of the city's construction, had watched the megastructure slowly rise from the desert, had seen the land become irrigated, then plowed, then planted. The entire construction process had taken over nine years.

Meanwhile, the existing cities, the sprawling, wasteful urban centers, had swelled to unbearable size.

HENSHAW

All of the homes in Basin City are very reasonably priced," Henshaw said. "For something like this, including all utilities for a period of three years, the price is \$19,500. I can draw up the papers right now. If you'll sign them today, I can cut the price by a thousand."

"I don't know," the man said. "I don't like to jump into things. I'm not sure it's what we want at all."

"Where are you from?" Henshaw asked.

"Los Angeles. Why?"

"Basin City's services were modeled after those of Los Angeles, New York, the biggest cities in the country. It was designed to fulfill every need of its community members. And everything is much closer to you than it would be in Los Angeles. Transportation is easier and more efficient, too."

"I don't know," the woman said. "It just seems... uncomfortable, somehow, you know? I mean, we've lived in L.A. all our lives. Basin City just isn't what we're used to. It's not what we're used to at all."

"Cars aren't allowed in Basin City, are they?" the man said.

"They aren't necessary. You can get anywhere you want within the city in fifteen minutes on the electric shuttles."

"I know. It's just that I like driving. It helps me relax."

"You can keep your car in the underground garage—with no fee charged for it—and you can drive around the countryside whenever you like. If you'll look at the map I gave you when you first arrived you'll see there are quite a few picnic areas right by the road, and a park and an artificial lake are being planned. There was a moment of silence.

"Do you have any children?" Henshaw asked.

"Three," the wrinkled woman said.

"Think of how much nicer it will be for your children to grow up in Basin City. There's no smog, no filth, no congestion, a lot less noise."

"That's true," the woman said slowly.

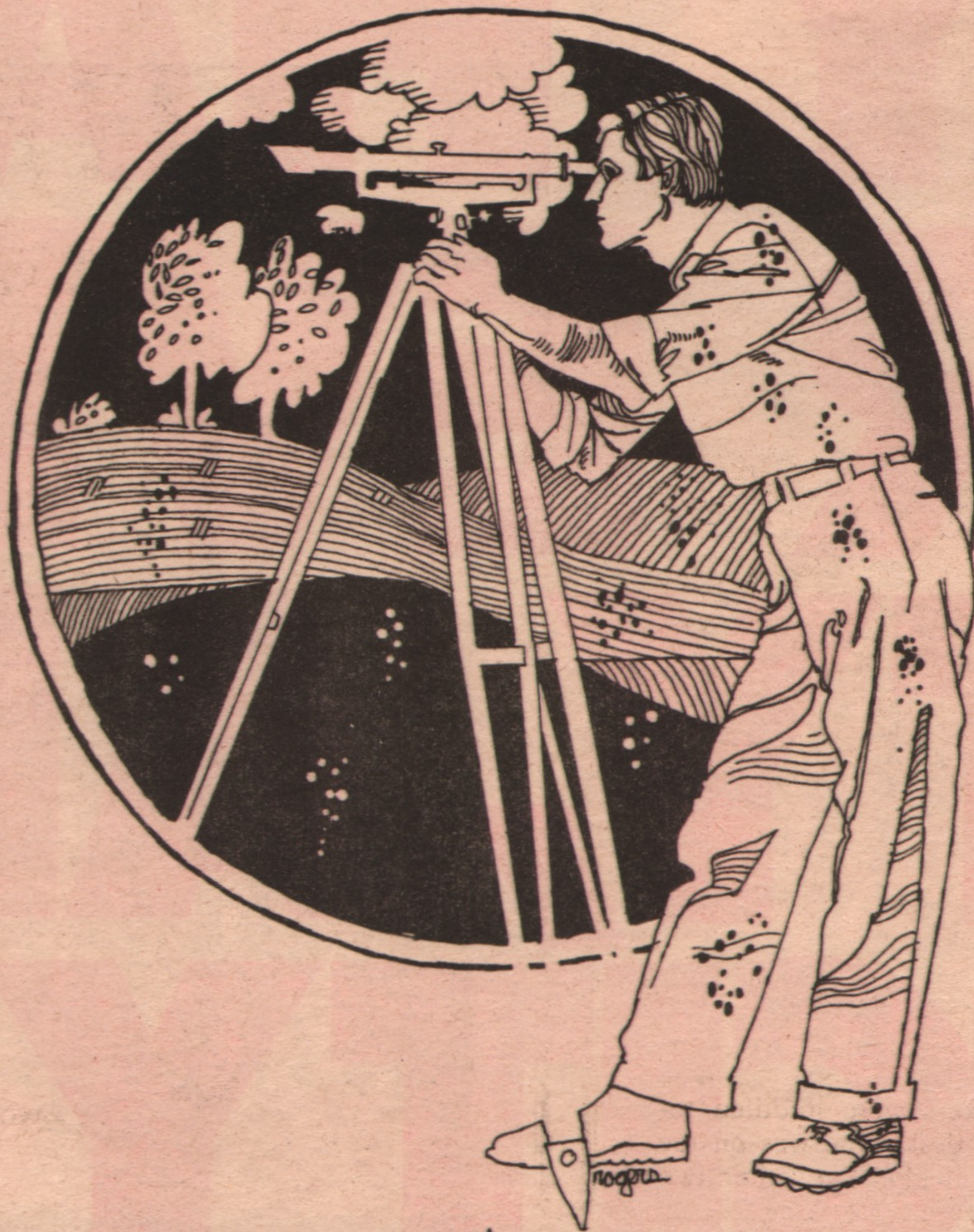
"No outdoors, either," her husband said. "You're stuck inside all day."

"Not at all," Henshaw said. "The outside is never more than ten minutes away by shuttle."

"But we're out in the middle of the desert." Energy seemed to flow into the man's flabby face. "When you go outside, it's only a few minutes before you get so hot that you have to go back in, so why bother?"

"It's not only that," his wife said, almost pleading with Henshaw. "All our friends live back in L.A. You said we should think of our children. How do you think they would feel, knowing that they'd have to make new friends all over again? Remember how lonely you were as a child when your family moved to a new town?" She stared past Henshaw, out the picture window.

"There'll be lots of children in Basin City," Henshaw said, following her gaze, himself looking at the newly-planted crops. "That's one of the major purposes of Basin City—to provide a healthy environment for children. Do you realize that sociologists predict that in Basin City there will be only a tenth as much crime as in most urban centers? And so far this has held pretty much to be true. Think of the protection it will afford your children."



"I don't know," the man said. "It's so far away from everything. It's over a hundred miles just to the nearest town of any size. We'd feel so isolated."

"A hundred thousand people will live in Basin City eventually," Henshaw said. "This town will become your home. You'll have a lot more community ties than in Los Angeles—and probably a lot more personal ties, as well. You may just find the people here to be a lot friendlier. One of the main reasons people come here is to get away from the isolation, the coldness of the big city. Basin City is designed to provide big city facilities with a small town atmosphere." Henshaw stopped himself there; carried away by his own sales pitch, he had repeated Basin City's principal advertising slogan.

"There aren't a hundred thousand people living here," the woman said, suddenly turned cold by Henshaw's remarks. "There probably aren't even ten thousand."

"There are over nine thousand living here right now," Henshaw said, carefully keeping his voice genial. "And we expect the population to rise greatly in the next few years."

"What if it doesn't?"

SHARTAR

A boom pounded against the structure's metal side. The earth shook. Shartar nearly fell.

He was forty years old. Within the next thirty years he would see the cities grow still larger, grow more wasteful and crime-ridden, more infested with dirt and disease. At the age of forty he had already spent a lifetime's energy at work on a solution to a tremendous problem, and had had his expectations crushed. He would live another thirty years, observing with disbelief the style in which Western man had chosen to live.

He felt as if death had already overtaken him.

HENSHAW

The man shook his head. Fat jiggled on his neck. "We'll have to think about it," he said hurriedly. He guided his wife toward the apartment's front

door.

"Well, look," Henshaw said. "Are you interested in hiking, horseback riding, any of those? Are your children interested in them?"

"No. I'm sorry." The man had opened the door and his wife was already through it, into the courtyard outside. She was speaking to him, urging him to leave. "We'll be back next week," he said. He shut the door, hurriedly.

Henshaw turned and glared out the picture window at the grain fields. He listened and heard the very faint hum of the city's environmental systems working a dozen levels beneath him. Idly, he scratched the back of his hand, then turned and strode across the room. He opened the door and looked out at the courtyard, its screens and fountains and subdued lighting. A shuttle was just pulling away from the courtyard. He stared at it, dazed, until it rounded a corner, then shut the door behind him and walked to the courtyard's center to catch the next shuttle.

SHARTAR

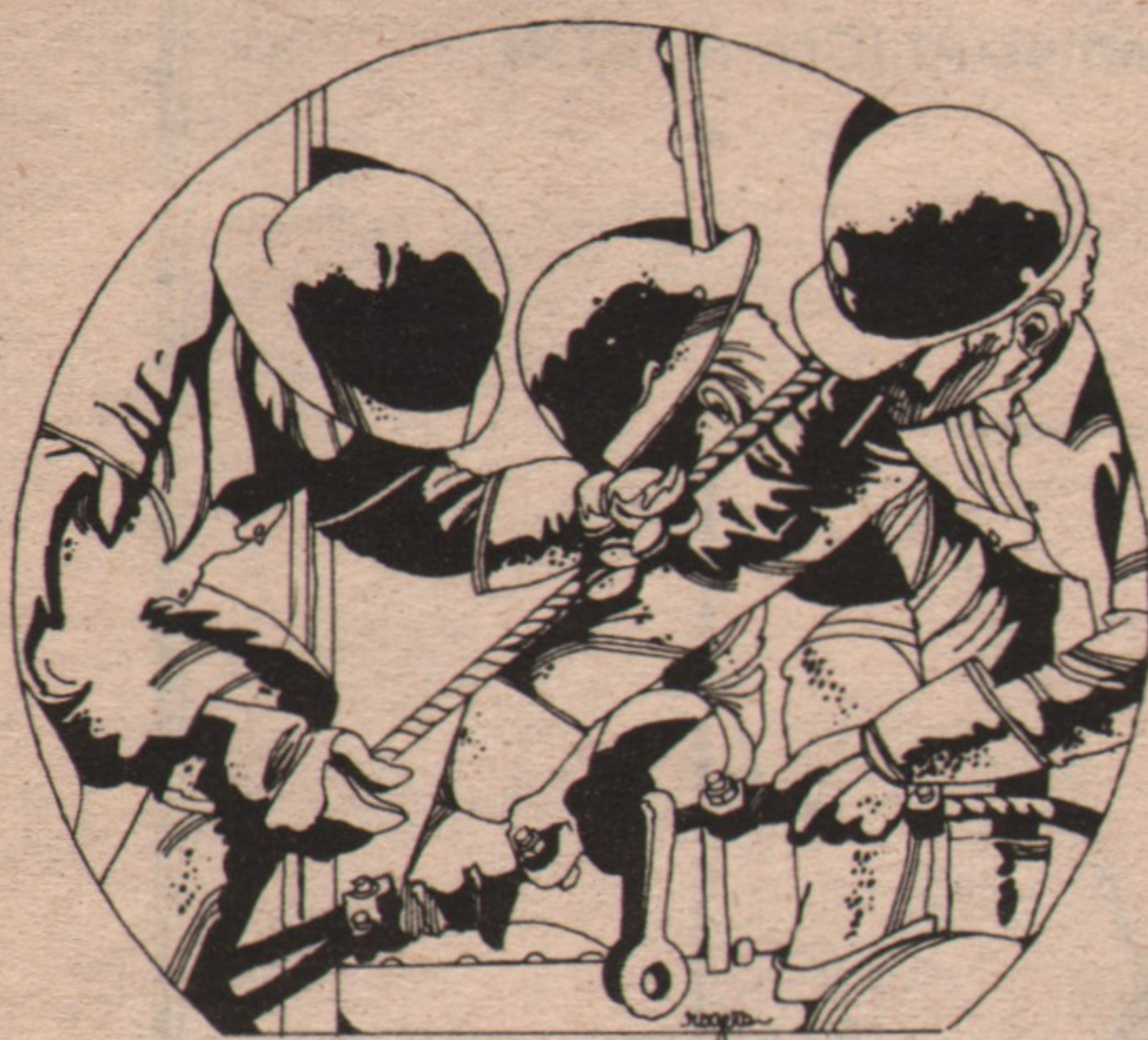
He remembered a talk he had given, many years before, when his plans for the city had been perhaps half completed. He was speaking to a group of students at a small liberal arts college somewhere in the midwest. He had just finished relating how the city was to be structured, and had emphasized its independence, its superiority to the urban structures then—and still—in existence.

A student had raised his hand. He was small and thin and had beady eyes that gazed out at Shartar through thick glasses. Shartar called on him.

"Granted," the student said, "that all you've been talking about is a far better alternative than rotting away in smog and slag and your own urine. Granted that your city will be cleaner and less wasteful and more compact and better planned than anything we've got now. I understand what you're trying to do, and if it works it'll be the best thing that's ever happened to man since the industrial revolution.

"But Mr. Shartar, what in God's name makes you think that people are going to be willing to live there?"

What he was offering was everything they needed, except an excuse for them to accept his offer.



HENSHAW

When he entered his office seven levels down, Henshaw was confronted by an excited babbling. The other three brokers were huddled together around a desk. One was on the phone talking quickly. The other two were smoking cigarettes, talking to each other.

"What happened?" Henshaw asked, striding inside.

Dave Snyder walked over to him. "They're closing Basin City down."

"What?"

"They're dismantling all the residential sections but one. Everyone will have to move into that section or move out completely. We're going to lose a lot of commissions because of that. The whole city's going to be turned into an industrial complex. Even the farms won't be used; food is going to be shipped in."

"But . . . all of a sudden, like this?"

"Basin City's been operating at a loss for two years. Money ran out and the government won't give them another grant."

Henshaw was quiet for a moment. Then he said, "I thought we'd at least have until the end of the year."

Snyder shrugged. "What difference does it make? If people aren't going to move into Basin City in two years, they probably never will. The whole complex can't be operated very economically with a population of nine thousand. And that's forgetting about all plans for future development."

Henshaw stared at Snyder. "When we were granted a real estate license to Basin City, we thought we'd gotten the biggest break of our careers." He strode to his desk and sat down wearily. "For two years we've barely been able to keep this office open." He lit a cigar and exhaled the smoke noisily. "Maybe it's better this way. Now at least I'll be able to spend the whole week with my family again. Driving from San Diego to here on Mondays and back again on Fridays takes all the energy out of me."

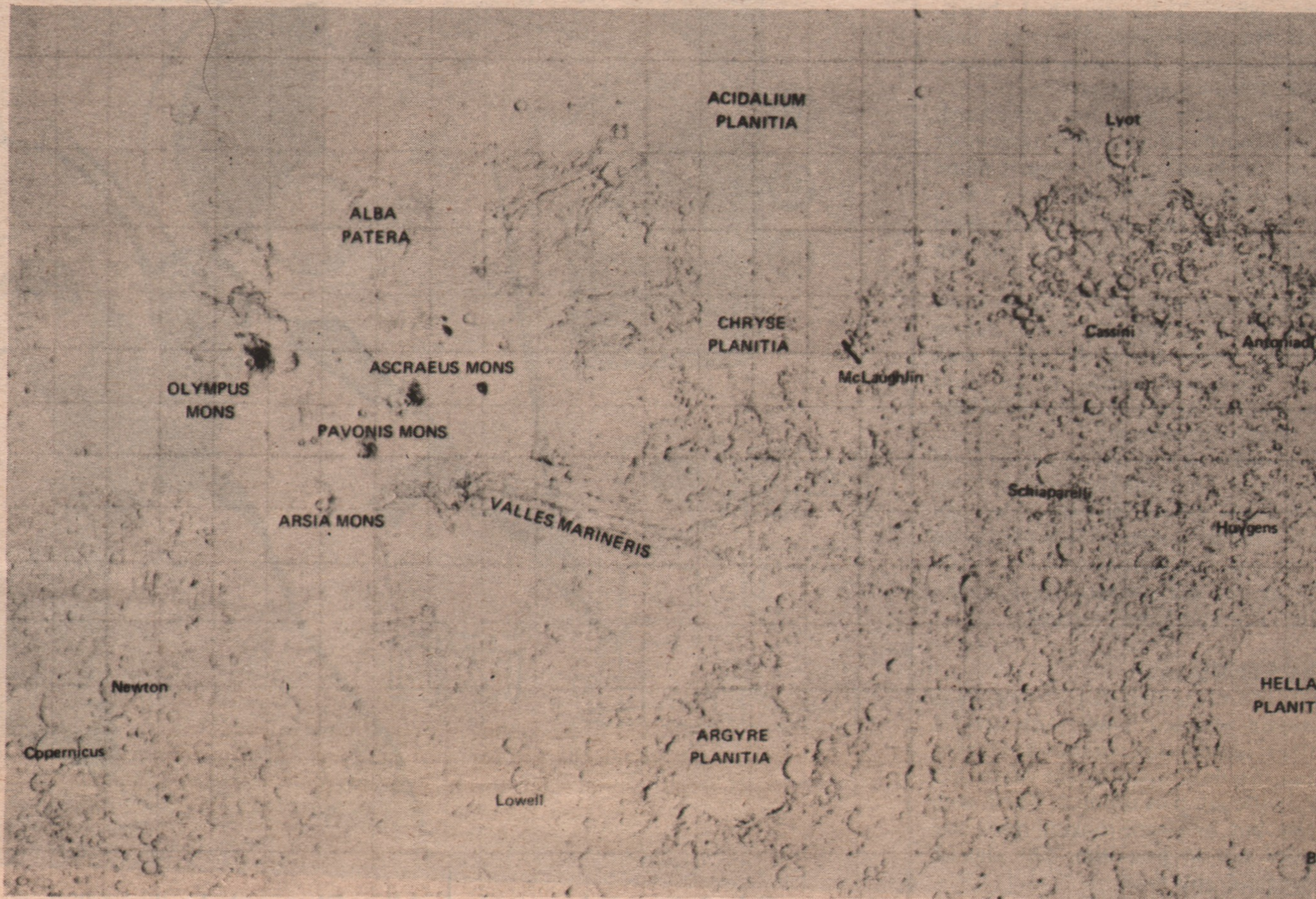
"I'm shot," Snyder said. "It's Thursday. Let's call it a week and go home, okay?"

SHARTAR

He watched a boom crash against the straining metal one final time and thought about the hundreds of millions of city-dwellers choking to death on their own wastes. Then he turned, feeling the trembling beneath his feet, walked down the gentle slope to the road, got in his car, and drove away. ○

THE NEW MARS

The Discoveries of Mariner 9



THE NEW MARS, National Aeronautics and Space Administration, \$8.75

Many books have been written about the Red Planet, from the initial telescopic reports of Galileo in 1610 to Gerard de Vancouleurs' 1954 volume, *Physics of the Planet Mars*. But none have been able to examine our neighbor in space, simply because none of the earlier writers had the use of twin spacecraft at Mars, relaying data no one could have accumulated through a telescope.

This large book (9 by 11 inches, 179 pages) was written by William K. Hartmann of the Planetary Science Institute and Odell Raper of the Jet Propulsion Laboratory with the cooperation of the Mariner 9 Science Experiment Team.

With 81 photographs, 13 of them in color, and 8 color paintings depicting the surface of Mars, the book is visually quite exciting. It isn't just a coffee-table book, though, meant to interest and/or impress visitors. In contrast to most government publications, this one is both easy and enjoyable to read. All the technical information anyone could hope for is there, a detailed examination of the discoveries of Mariner 9 by the people most closely connected with the mission. But it becomes immediately obvious that the authors of the book knew non-scientists were going to be reading it, and they made it informative and interesting for the non-scientist without writing "down" to the poor, uneducated masses—a failing too often seen when a scientist tries to write a "popularization."

The book opens with a history chapter outlining what we thought we knew about Mars, and how we came to think that way. Examined are the early assumptions that there had to be life on Mars, the coming of the canals, the discrediting of the canals, Mars in science fiction, and the development of more and more accurate scientific information on the Red Planet as space research became more and more sophisticated. Included in this section is a painting from the mid-1940's of the Martian surface by Chesley Bonestell showing how much our concept of what the fourth planet looks like has changed.

The book next looks at the planned profile of the Mariner

9 mission, including the initial planning on what instruments the vehicle should carry and what went into the actual designing of the spacecraft.

From that point, developing just as the scientists back on Earth saw the story developing as it came in from Mariner 9, the book looks at Mars—a new Mars in many ways unlike the expected picture of a larger version of the Moon. Surface features, how they came about, and what they indicate of present conditions, and what they presage for the future of the planet, are examined in detail. In many places Martian surface features are compared with Earth-counterparts, pointing out the similarities between Mars and Earth, but even more strikingly pointing out the differences. The giant volcanos, the great canyons such as Valles Marineris, named after the spacecraft, the deserts and polar caps—all are looked at in detail. When you finish this book you'll likely know more about the surface features and geology of Mars than you do of your own state, and the way the book is written the learning experience will be an enjoyable one.

The book closes with a chapter devoted to the moons of Mars, Phobos and Deimos, and a summary chapter on what we have learned from the Mariner missions on Mars, and what we hope to learn in the future. In the words of the authors, "Mariner 9 has changed Mars from an astronomical object into a place, and has opened not a single frontier but an entire varied globe to future exploration by man."

At \$8.75, the book has to be one of the bargains of the year, and the only reason it's available at that price is because the publisher is the United States Government. From any other publisher, the price would undoubtedly have been fifteen or sixteen dollars. For anyone interested in space, the book is a must. You can get it from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Ask for Stock Number 3300-00577. If you were raised, as I was, on Wells and Burroughs and Bradbury and Heinlein and Clarke, you're going to be amazed to see what's happened to our Red Planet. ○

THE SIGNING OF TULIP

fiction / F. M. BUSBY / artist / ALICIA AUSTIN

NOW:

Westman looked around the locked room—at the man holding the gun, at the woman trying to get up, and at the corner where Tulip crouched, bewildered. He asked again, “Who are you, really?” Then, “I’ve seen you somewhere. What’s your name?”

The room was small; the man’s harsh laugh filled it. “If you can’t remember last week’s headlines, my former name doesn’t matter. I broke out and I’ll stay out. You can call me Zaird—Colonel Zaird, of the FFJ. Does that tell you anything?”

The woman was on her knees now, hands braced against the floor. Before Westman could speak the other man said, “Now you know, so get that damned door open. I’m going out of here and taking her with me.”

Westman shook his head. “I told you—I don’t know the combination.” He nodded, not toward the man or woman but toward the corner. “Only *she* knows it—she, and the computer.”

“Then tell the damned freak to get busy.” The gun hand twitched.

YESTERDAY:

On the closed-circuit screen, Ivar Westman watched Tulip push the six buttons, rapidly and without hesitation. When the door opened, she made her usual little jump of triumph. Then, with a fast but awkward-looking gait, she scuttled out to join him. She signed, *Tulip good, give food.*

He turned to her and answered with his hands. By habit, he spoke the words also. “Tulip good. Eat one food.”

Tulip smacked her lips, grimaced and signed again. *Two food. Give Tulip two food.*

“No. One open, one food.” Tulip looked away, scratched herself, then reached to the fruit bowl. After deliberation she chose a plum, and started back toward the door.

Reaching it the young chimpanzee turned, and put the plum in her mouth to free her hands. She signed, *Door. Two open, two food,* and went into the testing room. Activated by her entry, the door closed.

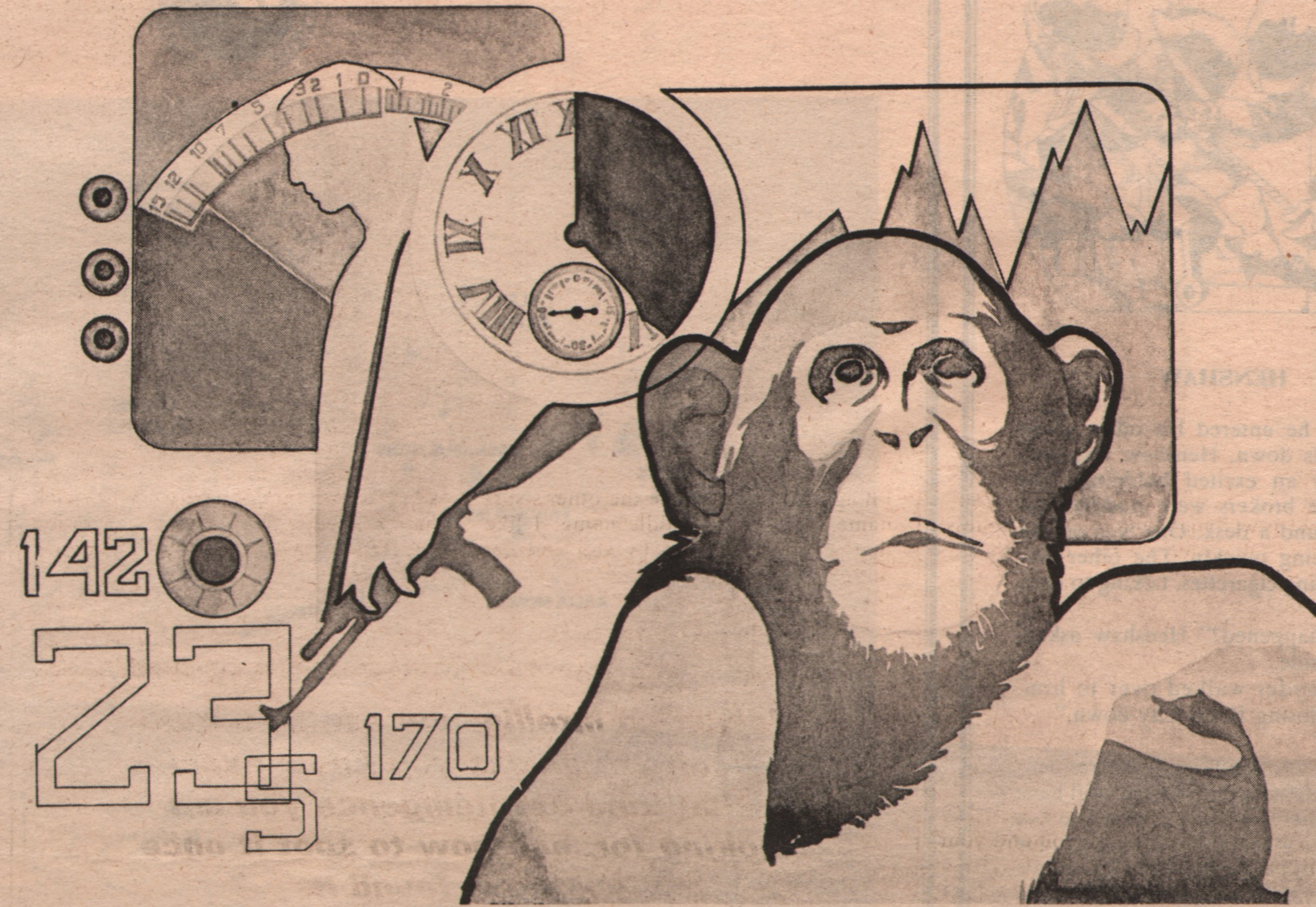
Behind Westman, the woman’s voice startled him. “She’s getting to be quite a little dickerer, isn’t she, I’ve?”

He turned. “Hi, Maurine. Didn’t hear you come in.” He smiled as he looked at Maurine Zagren—straight, slim, with dark hair framing her tanned features. “Glad you’re back. How does it feel to be the daughter of a Supreme Court justice?”

Maurine grinned. “Wonderful, if you want to know. To have a woman on the Court, finally—and my own *mother*. I’m floating, I’ve.”

She came to him; they kissed. He hugged her and stroked her hair where it hung past her shoulder. When she snuggled against him her dark head touched his nose; he sniffed the light perfume she wore.

With a final squeeze he laughed and released her. “Well, I’m glad for both of you.” He turned to the screen, where Tulip reached toward the buttons, pulled her hand back, moved up and down in a slight bouncing motion as she awaited



the green light that meant her console was activated.

“She’s getting impatient. I should have left the switch on ‘lock.’” He moved the toggle but again did not engage the locking clip.

On the screen they saw the light glow; Tulip’s fingers moved rapidly and again the door opened. The woman asked, “How long since she’s missed?”

“She learned the new sequence progression in two days; she hasn’t brought on the red light and buzzer since then. Her biggest hurdle, of course, was earlier—learning the *concept* of progression.”

Tulip came to Maurine, taking the woman’s hand in both of hers and holding it to her cheek. When she released the hand, Maurine signed, *Tulip good. Take one food.*

Tulip looked, chose a pear, then paused and set the fruit down. She signed, *Tulip go Jasmine. Give Jasmine one food?*

Maurine looked at Ivar; he nodded and signed, *Give Jasmine one food.* Tulip took another pear, picked up her own and scampered away. The screen door banged shut behind her as she entered the hall leading outdoors. Westman said, “She’s coming along faster than most, despite everything. I wonder what her limits will be—or if our own will stop us from finding out.”

The woman moved to a chair. “Let’s sit down—I had a long day yesterday, and a short night.” She kicked off her shoes and stretched. Then, “I’ve, do you think she’ll really give the other pear to Jasmine—or is she up to pulling a little swindle?”

Westman shook his head. “No, she’ll

deliver. Oh, sure, she has the intelligence to lie—even dogs have, for that matter—but it’s not part of her pattern. She’s always been rewarded for honesty and ignored for her few lapses. The only times she plays games is when they are games—and she knows the difference.”

Briefly, he laughed. “Tell me, Maurine—when you were in school did you ever think you’d wind up on a project trying to determine the I.Q.s of chimpanzees?”

“Hardly. And when I took the offer I had no idea how totally *fascinating* it would turn out to be. These past two years . . .”

“I know.” He stood again; for a moment he gripped her shoulder. “I could use some coffee. How about you—coffee? Tea? Something from the fridge?”

“If there’s any grapefruit juice . . . otherwise, coffee’s fine.”

He walked along the hall; the kitchen was on the left, second door. He checked the coffee urn and decided the contents were not too old. In the refrigerator he found an open can of Maurine’s juice and poured a glass.

Back in the testing room and seated again, he said, “Webling’s field report came in. The new tests still aren’t the answer.”

“Are they any improvement?”

“Some. He tried them on over a thousand retarded deaf children in—I forget how many institutions around the country—more than twenty. Correlation with the standard tests was good over a considerable range—but the divergence sets in at just about the levels our little friends here can manage.”

“So we still can’t assign Tulip—for instance—an I.Q.-rating in human terms.

I’ve? Do you think we ever will?”

He shrugged. “I’m not sure that it even matters all that much, except to the press and for, hyping up political support at budget time. We’re finding out what chimps can *learn*—and *do*. It shouldn’t be important whether we can compare their abilities with our own on a one-to-one basis. Maybe we can, maybe we can’t. Maybe the speech center is so great a part of human reasoning power that tests that ignore it *can’t* correlate with those that don’t.”

She reached, and squeezed his knee. “Then let’s don’t worry about it. So—what else is on your mind, lately?”

His hand covered hers. “Well, there’s us, of course. Have you decided yet? And what does your mother say?”

“Oh, Cecile’s on your side, as usual.” Maurine grinned. “My mother the liberal jurist still has a sneaking preference for legal marriage, old style, when her only daughter’s concerned.”

He nodded. “Sensible woman. So—why be a holdout?”

“Well . . . I *wish* you wouldn’t be so stiffnecked, insisting on barring yourself from community property rights.”

Now he shook his head. “No gossip writer gets the chance to call me a fortune hunter. We’ve been over this before.” He squeezed her hand. “Come on—what do you say, Maurine?”

“Can—can you wait until the fifteenth, I’ve? Cecile can’t get free before then, and of course she wants to be here.”

His silence lasted nearly thirty seconds. Then he said, “You could have just *told* me, you know . . .”

“But it’s more fun to be asked.” When next she had the chance to speak, she had no breath for it.

When Degardis, the swingshift attendant, arrived—on time, as usual—Westman and Maurine went to their lakeside apartment. They showered and after a time dressed to go out for dinner. Transferring her billfold from one purse to another, Maurine found a small piece of paper.

"Ive? I forgot this. Denise had gone when I came in this afternoon, but she left this memo."

He finished tying a shoe and stood. "What's it say?"

"Hmm . . . Denise must have written this with her left foot—a freelancer wants to interview us, about the project. A Roger Wolfe, or maybe it's Walfe."

"Either way, I never heard of him. And why us? Doctor Kawahara's the official voice around here, and he's due back sometime next week."

"Tight schedule, apparently. Or, as Denise puts it,"—she spelled it out—"TITE SKED. He's asked to see us tomorrow, at the labs."

"Saturday?" Westman paused. "I was sort of looking forward to our day off . . ."

"I should go in anyway, Ive. I can't get caught up in one day, but at least I can find out how far behind I am."

He shrugged. "Oh, all right. With you and the Doc both gone, I'm a little behind on the paperwork, myself. So—might as well make it a full shift, I guess, and let Olivia have a free day. We still owe her a couple from last month. Now how do we—?"

"There's a number. Here." Westman took the paper, sat and punched out the number.

"Hello. Mr. Wolfe?"

"Yes, I'm Wolfe." The voice sounded thin, and harsh.

"Ivar Westman. I understand you'd like an interview tomorrow."

"Yes. I'd appreciate it. You and your assistant both, if possible."

Westman made a grimace, but did not explain that Maurine was hardly his assistant—that they worked as a team. He said, "All right. Tomorrow afternoon, at the labs—say, two o'clock?"

"Yes. Yes, that's fine."

"Okay. See you then."

"Right. Thank you. Good night." The phone clicked.

Westman punched another number. "Olivia? How'd you like to take tomorrow off?"

Olivia Croix laughed. "Love it. But how come?" He explained, and the conversation ended quickly.

Westman stood. "Maybe if this Wolfe knows what he's doing, that part won't take too much time." He picked up his jacket. "Let's go eat, shall we?"

Poseidon's Palace overlooked the bay; no buildings obstructed the view. Ivar and Maurine were seated without delay; shortly they clinked Martinis together gently, took first sips and fell silent to watch the red glow of sunset on the water. A huge ferry entered the shadow cast by the far headland; a bumptious tug cut across the brightest area of reflected light. "Always beautiful, isn't it, Ive?"

"Huh? Oh yes—of course."

"Is something bothering you?" Her voice sounded concerned. "You're feeling all right, aren't you?"

"Oh, sure. It's just—did you see the headline on the stand, as we came in?" She shook her head. "More damned terrorism! If it isn't the Fanatic Left it's this new rightwing outfit, the Force For Justice. They all talk high ideals and behave like mad dogs!" Pausing, he managed a grin. "I'm sorry. That's no way to celebrate, is it?"

She reached and touched his hand. "It's all right; I don't like it any better

than you do. And you ought to hear mother, on the subject! She'll be sitting when Hoagerth's appeal comes to trial. The bus station massacre—remember? Four survivors identified him solidly, but the arresting officer's report spelled his name wrong! Well, there's more than that, of course, but Cecile says the whole appeal is built on trivialities. Non-germane, she says—in the tone of voice that means she's not putting up with any nonsense."

"Well, that's a help." He breathed deeply, and said, "You never did tell me about the ceremonies. Did it all come off okay?"

"There were a few highlights—" She laughed, leaned forward and talked softly. By the time she reached the incident of the prominent official, his faulty zipper and last-minute rescue by a receptionist's stapler, Westman also laughed. He enjoyed the dinner a great deal.

Later at the apartment they sat facing the moonlit lake. At Poseidon's they had declined liqueurs; now each nursed a tiny glass of Drambuie. Ivar said, "Are we fully settled, on the marriage terms?"

Her hair moved against his cheek. "I have nothing new. You want separate financial holdings; I think it's silly but I'll agree. We each take the other's surname as an extra middle name; I like that. I have one child by you and the option of another by anyone of my choice—including you—and no more." He nodded, and she turned to him. "You

file notation recommended transferring Bozo to "graduate school", an area where the trained adults lived in relative freedom but under close observation. "He's been a good one," Westman added, "so pay special note to how much he continues use of signing with the others, with less stimulation from humans."

Some files required only his comments; others demanded that he leave his desk to go deeper into the building and test one of his small friends' responses against the bare records. Miriam, age four, female, performed much better to signing plus voice than to signing alone. Interesting: taking some fruit with him, he joined Miriam for a half hour of games with her training toys. The report proved correct. He lacked the time to give Miriam as much petting and cuddling as she wanted, but left two extra plums in recompense.

Sonya, second-generation trainee; first taught signing only by her mother, Mercedes. Most chimps do not sign as precisely as do humans; until human teachers also worked with her, Sonya's "accent" was almost unintelligible—except to Mercedes. "Analogous to regional dialects," wrote Westman, and wished for the time, space and money to conduct more extensive experiments. Start two self-teaching families, he thought—what happens when they meet, a generation later? He shrugged; it wouldn't happen in his time . . .

Midmorning brought coffee break; Maurine joined him in the kitchen.

Measuring intelligence can be a quite difficult job unless you know exactly what kind of intelligence you are looking for, and how to spot it once you have found it.

can't stop me from leaving you money in my will, you know." She nipped his earlobe. "Married or not, I can do that."

"It's a waste of time; ask the insurance companies." But he hugged her. "Sure, Maurie—I don't want the money, but do as you please. Since you will, anyway . . ."

Clouds hid the moon, and they found no reason to sit longer.

Ivar Westman woke to sunlight that matched his feelings: *Maurie's home again*. He turned and saw her also awake. "It's a little early," he said, "but let's get up anyway."

"All right. Nothing like a change of pace."

They breakfasted leisurely and well, and arrived at the laboratory site with several minutes to spare. As they walked in, Ivar whistled.

Pennell, the night man, had no objection to leaving early. Westman checked the logsheets quickly; he saw no problems and waved Pennell on his way.

Maurine said, "I'd better go get acquainted with Jasmine. The interim tests don't look too bad but the program is lagging. Not too much, I hope."

Westman nodded. "I hope not, too." As she left he began reading reports on chimpanzees he did not usually work with directly.

Bozo, male, above average but lately moody and given to tantrums. The young ones, thought Westman, will play our silly games of intelligence and communication. But once sexual maturity begins, they have no time for anything but serious business . . .

"Well," he mused aloud, "that goes for a lot of so-called humans, too." His

"Jasmine's doing well," she said. "We didn't lose much. I think she was frustrated while I was gone; she's certainly eager enough, today."

He told her the highlights of his own findings, then asked, "How's Turtleneck doing?"

"Now that's odd. He's past due for puberty, for losing interest and becoming irritable, but he doesn't. Possibly he's just short on hormones. A physical checkup, do you think?"

"For sure. But maybe there's another factor. I hope so."

"Yes, I know." She stood, and washed her cup. "Well, back to it." He smiled and nodded as she left, then followed her example and set out, with his clipboard, on his own late-morning rounds.

He found Tulip in her favorite playground, squatting before a board composed of dark and lighted squares. She touched a button; a light went out and Tulip jumped once as she waited for the computer terminal to match her move—the computer was set for a five-second delay, to simulate a living opponent.

The game was an advanced version of tic-tac-toe, and Westman saw that Tulip was winning too easily; it was time to reprogram for added complexity. But no hurry . . .

When the game was done she turned to him; he signed: *Good win; play more?* Without answering, she came to him for cuddling; he gave and accepted it. Then she pulled back and signed for food and sleep—nap time. Hand in hand they went to her sleeping quarters, stopping on the way for her to select a peach and an orange.

Westman's own stomach felt overdue for lunch. In the kitchen he rummaged

in the refrigerator and cupboards, and was stirring a steaming kettle when Maurine joined him. "Hi! Just in time for Westman's famous grab-bag goulash, from the recipe handed down for generations."

"I didn't know you had a recipe, Ive. I mean, it's never twice the same."

"That's the beauty of it. Easy to remember, too—the first two vegetables I lay hands on, and brown the hamburger before adding."

Early in the afternoon Westman found he had used up all the interesting tasks from his backlog and was left with the routine chores he tended to postpone. When the gate-buzzer sounded, shortly before two o'clock, he sighed with relief and went to admit the visitor. The man was tall, with sandy hair; his acne-pitted face bore fresh sunburn. He said, "I'm Rog Wolfe. You're Westman?"

They shook hands. "Yes. Come on in." Westman led the way; inside, he introduced Maurine.

Wolfe said, "Maurine Zagren. *The Zagren?*"

"Daughter of *the Zagren*, yes."

"Well. How does it feel?"

"I'm proud of my mother, of course—"

"Sure—and congratulations. But it doesn't change anything, you know."

Maurine frowned. "I don't understand."

The man waved a hand. "Because your mother's rich, just like all the others. Did you ever think, how can there be justice between rich and poor, when no *poor* man ever sits in judgment?"

Westman spoke. "Not entirely accurate, but you have a point—judges aren't named from the welfare pool; I'll grant you that. But we both know why."

He gestured the other to silence. "Except for a few J.P.s out in the boonies, judges are lawyers first. And for good reason—do you want the law interpreted by people who don't *know* law?"

Wolfe hunched his shoulders forward and dropped his chin into their protective custody. "Maybe what we need is less law and more justice."

Maurine said, "No one disputes that, Mr. Wolfe—as an ideal. In practice it's not quite so easy." She breathed deeply once, smiled and said, "But hadn't we better get on with the interview?" She sat, and the two men did, also.

The man shrugged. "Yes, you're right." He took out notebook and pen. "I've read some about all this, of course—but pretend I haven't, and start from the top. That way I'll probably pick up facts I've missed." He looked to Westman.

"All right. Let's see—" Westman began with the earlier, disappointing attempts to teach chimpanzees to speak, the realization that chimp intelligence was greater than those experiments indicated, and the introduction of American Sign Language, used by the deaf.

"Bypassing our friends' lack of a true speech-center, you see. The work began in the 1960s, made considerable progress and then was stalled for lack of funds—until the Carrington Foundation, operating partially on Federal grants, established this project eight years ago. Dr. Kawahara's in charge; Maurine and I, jointly, are more or less his chief honcho. The group here is conducting a number of related programs—" He described several of the major lines of study—the comparative efficiency of sign language to that of verbal commands and questions, graphic symbols, sequential light patterns—separately and in combination. "We still have a lot to learn. But even so, the results to date have been—we think—spectacular."

Wolfe interrupted. "Yes. I saw, in the paper. But you're enslaving them, making them do scutwork. At a time when computers are putting men out of work."

Westman shook his head, hard, trying to understand. Then it came to him, and he laughed. "Oh—you mean Jasmine, sorting parts into bins?" Wolfe nodded; before he could speak, Westman continued. "You should have seen that. I saw part of it, and Art Schatz told me the rest. Here's how it happened . . ."

"Jasmine looked in at our Apparatus Shop to see Art, because she likes him. Art was busy sorting miscellaneous components from dismantled experiments; it's a tedious chore and there's a lot of it to do sometimes. Jasmine watched for a while and pretty soon she began trying to help. She made mistakes at first, and Art hadn't been here long enough, then, to learn much Sign Language. So he showed her by pantomime—taking a component and going along from bin to bin until he came to the one that matched. Just a few examples and she had the idea.

"I got there at the funny part—when she caught him out. Art was short one container so he'd doubled up two items. Jasmine didn't like that; she was scolding him something awful." Westman laughed. "I had to go scrounge up an empty coffee can, to keep the peace."

Wolfe showed no amusement. "So now you have a slave you can pay off in bananas."

"Slave? Just try to keep Jasmine out of the Apparatus shop, mornings. It's a game to her; don't you see? And she only plays as long as she wants to. Usually she runs out of parts while she's still interested, and drives Art nuts by mixing a couple of handfuls so she'll have something to do."

"If you say so." The words came grudgingly. Then, "Can you show me anything new today, some eyeball stuff?"

Brows raised, Westman looked at Maurine. She said, "How about Tulip?" He nodded, and she said, "Shall I fetch her?"

"We could go to the playground; the board game's there. Or do you think the door here—the combination lock, and the screen for observation—would impress the public more?"

"The door, I think." She stood. "I won't be long."

As she left, Westman said, "In a way, Tulip is our star pupil. It's too bad—well, it's too bad there aren't more like her."

Wolfe leaned forward. "What does she do?"

"She—no, I have to give you some perspective. Have you had any experience with retarded persons?"

Wolfe had a harsh laugh. "I've watched Congress on TV."

Westman lost patience. "I didn't come here on my day off, Wolfe, to listen to your political resentments. If you can't stick to business, let's scrub it." The man shrugged; his expression might have been meant for apology. Westman said, "All right. Part of my homework for this job was to study how retarded youngsters can learn and function." He paused. "Wolfe—! What we're finding out, here, is that chimps—in their own way, with the limitation of lacking verbal speech—can think and function on a level with a considerable percentile range of humans."

"I know about percentiles. What's the range?"

"We don't know yet. The problem is devising tests that use only the abilities chimps and humans have in common—no speech or reading, for instance, although some of our chimps can 'read' in the sense of correlating graphic symbols with hand signs—tests that check out

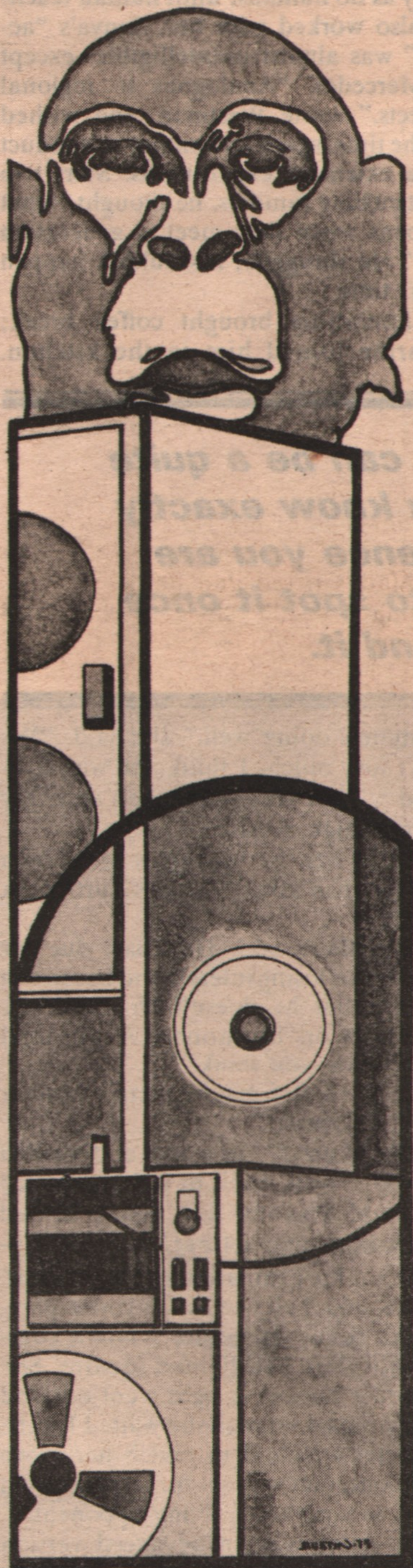
with standard tests when used with deaf retarded children. We haven't done it yet and maybe we can't. But if we do, we can rate chimpanzees on the standard human I.Q. scale."

Wolfe said, "And you think that's important?"

"I don't know if it is or not, but certainly it's interesting."

"As long as the world is set up for morons, I guess you're right."

Westman gave his guest a hard look. Then as Maureen entered with Tulip, he relaxed and signed a greeting. The young chimpanzee signed: *Tulip win good*. Then: *Open door? One open, one food?* She turned toward the door; he tapped his foot once, saying, "Look." She looked back; he signed and said: "Wait." Tulip squatted and watched him.



Tulip knew that her food depended upon her ability to learn the game and follow the orders given her. So, that's just what she did.

To Wolfe he said, "Once in that room, the only way Tulip can open the door from inside is to punch a series of buttons in the correct order, with no repetitions. She began with two; now she's up to six."

"That doesn't sound too hard."

"Do you know the law of factorials? Six buttons make seven hundred and twenty possible combinations. Care to try it?"

Wolfe shrugged. "Not especially. But once she's hit on it . . ."

"Each time she succeeds, the computer is activated to change the combination—in a logical progression. And the point is that Tulip is able to learn that pattern and know what the next combination will be. Which is more than I know, without checking the readout tape."

Impatient, Tulip rocked on her haunches, but Westman continued. "Five days ago we changed the sequence pattern. She solved it in two days—with a little help—at first the starting-point button was lighted to give her a clue. Since then she's made no mistakes."

He signed to Tulip; she scuttled through the door and it closed. Westman turned the screen on. "Now watch." They saw Tulip sitting, waiting. He activated the console, and moved the locking clip to hold the switch operated.

Tulip reached; her fingers moved rapidly and the door opened. She jumped, clapped her hands as she ran out, then signed: *One food*. Westman signed agreement; she squatted and ate a plum.

Three times she repeated the performance. Westman said, "Satisfied?"

"I guess so," said Wolfe. "I couldn't follow exactly what she does—she moves too fast—but I could see it was different, one time to the next."

"Good. Now then—what else can we do for you?"

Wolfe frowned. "Well—is there anyone else here I could talk to, and maybe get a few additional sidelights?"

"I'm afraid not. We gave the regular Saturday attendant the day off, since we were going to be here anyway. But—"

"In that case—" For a moment Wolfe turned away; when he turned back he held a gun, a medium-caliber automatic. "In that case I'll take what I came for, and leave." He grasped Maurine's arm.

Confused, Westman said, "What the hell is this?"

"Simple kidnapping, slave trainer. Zagren goes with me."

She tried to pull free. "But why? I'm not all that rich—"

Westman cut in. "And ransom payments are virtually impossible now; you must know that. Ever since the Hearst Law—"

The gun swung toward him. "Be like a clam." Then, to Maurine, "Your mother—Madame Justice Zagren. The Hoagerth appeal—throwing out Ronnie Hoagerth's conviction and turning him loose—that's important to our group. I'm making sure of it."

Maurine shook her head. "You don't know mother. She won't—"

Wolfe grinned. "She'll disqualify herself; she'll have to. And maybe that's all we need. Or maybe I'm not the only one doing a job today." He shook his head. "That's enough—now shut up! And you, Westman—get in that room like I told you." The gun hand motioned.

Westman stood his ground. "What good will that do you?"

"You told me yourself—the chimp knows the combo out you don't. I can use a headstart." He laughed. "Seven hundred twenty possibles, you said? That should take you a while." His teeth showed as he snarled. "Now move!"

Slowly, Westman began to obey. *Seven twenty for him, he thought, but twelve or less for me. I know the pattern and the sequence; all I don't know is which step it's on now. And with a rush of feeling that dizzied him, I'm glad I didn't tell him that.*

As he approached, the gunman pivoted to keep facing him. Maurine stood still; Wolfe jerked at her arm. Suddenly she lurched toward him; her left hand clawed at his wrist and pulled the gun down. She shouted, but not in words. Westman grabbed for the gun also, hoping to hit the safety catch and disable the weapon. In the jungle of palms and fingers he could not know what he touched, but something clattered on the floor.

He looked down. The clip!—with all the cartridges, unless one were in the chamber. He kicked at it, missed, kicked again and saw it skitter to disappear under a filing cabinet. Maurine—on her knees now, hair hanging over her face, clung to Wolfe's arm. With his free hand the man struck at her. She screamed—a sound of rage, a war cry.

Then Tulip opened her jaws wide, leaped and closed them on Wolfe's ankle. Westman, in midstride, could hardly believe what he saw—Tulip? Gentle Tulip? But he did not waste the diversion; once more he kicked. He caught Wolfe's wrist squarely and saw the gun tumble through the air, falling into Tulip's problem room.

The kick took his balance; as he fell he saw Wolfe lunge after the gun, dragging Maurine and Tulip. Westman pushed himself up and went after them. His shoulder, where he had fallen on it, was a numb ache; he gasped for breath.

He stopped, and now there was time for fear. Wolfe, with the gun pointed straight at him, was rising; the man's expression gave no hope that the chamber might be empty.

He looked around, hearing the door close behind him. Maurine lay to one side, slowly turning to get to hands and knees. Tulip, teeth bared, crouched in a corner, shivering.

Westman shook his head. "I don't understand. Who are you, really?" The second time he asked, the man told him.

The name, the absurd *nom-de-guerre* of "Colonel Zaird", meant nothing. But he knew what atrocities the FFJ had done—and could do again. And now Wolfe, or Zaird, pointed to Tulip and said, "I told you—tell her to get at it. Fast!"

Westman tapped his heel on the floor once, then three times. He said, "Tulip, open the door," but he signed: *Tulip stay*. The frightened chimp looked at him and did not move. He repeated the sequence.

Zaird said, "What the hell's the matter? Get on with it."

"She's scared, I think—and confused. Give her time."

"That's what I don't have, to spare." The man went to Maurine and helped her to her feet. "See what you can do."

She looked at him and did not move. "If you were dying of thirst—" He slapped her; she said no more. Westman tensed to leap, but the gun swung back to him.

"All right—you. Go face the wall, hands behind you. Cross the wrists—that's right." In a moment Westman felt cold wire around his wrists; it tightened and he knew Zaird was twisting the ends together. "Now turn and sit down. Back against the wall and feet straight out." Westman stepped a little to the right, then followed orders. Sitting was awkward with hands tied—he almost fell, but

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IN FEAR OF K

from page 1

beyond the chamber was a maze. A black void of tunnels within tunnels within tunnels.

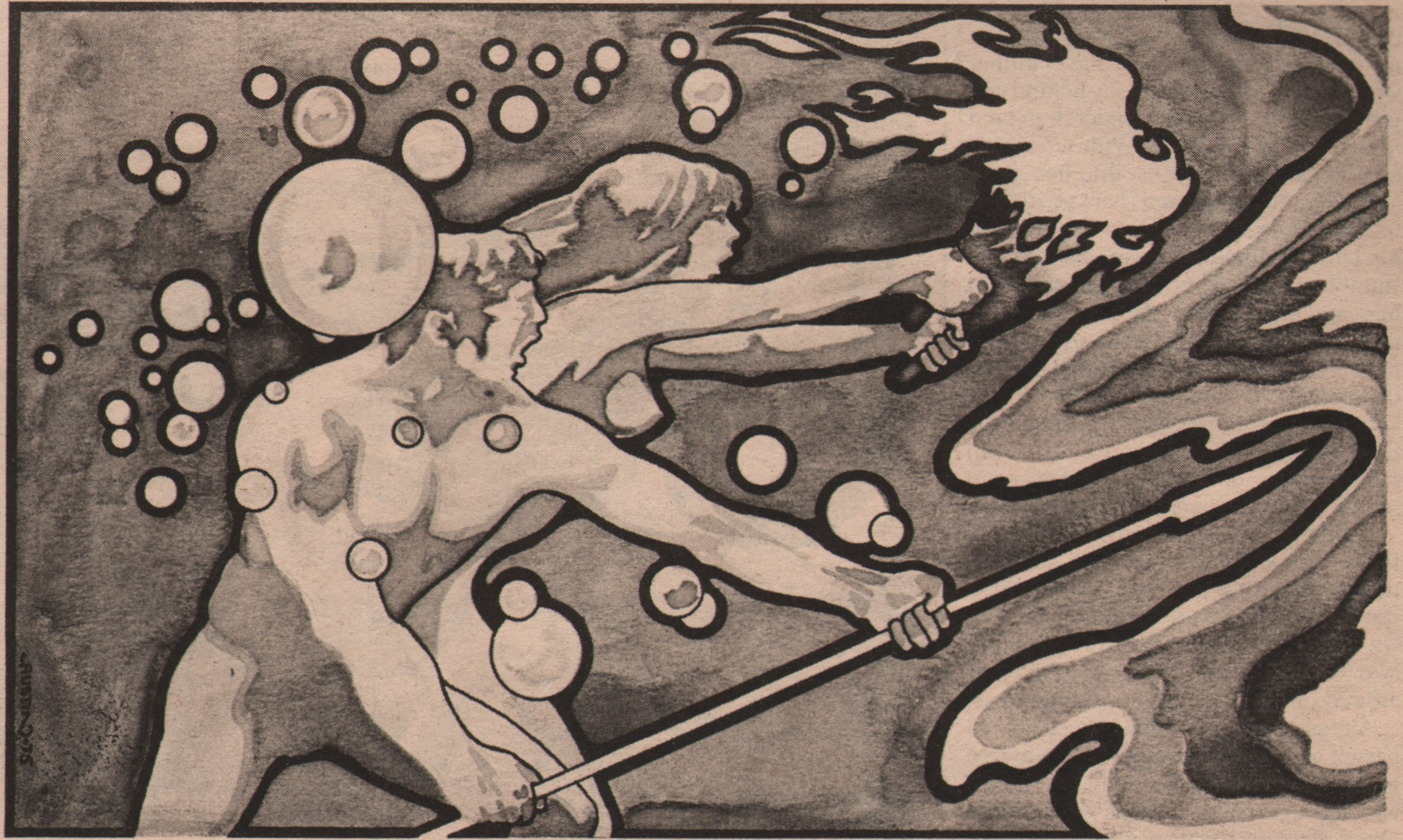
But it was not the certainty of being lost forever in the tunnel maze that had kept her, or Noah, from venturing into that labyrinth. Even being lost, even to die attempting to find a way out would have been preferable to living alone with such a hated companion. Neither Claudia nor Noah went more than a step or two into the tunnels for another, more important reason. The creature lived in those tunnels. K lived in the tunnels.

More than they despised each other, the man and the woman feared K. The central fact of their lives was fear of K. They had always lived in fear of K. There was nothing more important, nothing that dominated their waking and sleeping thoughts more than their fear of K. Survival, it seemed, depended on their fear of K. The unseen tormentor who roamed freely in those endless tunnels, who waited to kill them, devour them, who left them without peace or thoughts that were free of fear. Of K.

Claudia came through the opening dragging the sheet of black, shining fabric. The ingots of food were stacked on the sheet. She came in backward, digging her bare feet in and yanking the sheet with difficulty.

"You could help," she said, over her shoulder.

Noah looked up from his task. He looked at her, then went back to winding the oil-soaked rags around the flambeau.



"Stop ignoring me, you sonofabitch! Help me with this!"

He wound the rag tightly, pulling it till the fabric began to rip, tucked the end under to hold it in place, and did not look up. She waited the long moment, to see if he would assist her when his immediate task was finished, but he picked up another torch and selected another rag, and began working intently on the winding.

Her face tightened, then relaxed into innocence as she said, "I only wanted help to get it in because I heard K down the right tunnel."

His head came up sharply, he got to his feet in an instant, and grabbed the end of the fabric. With one intense yank he pulled the ingot-laden sheet into the center of the chamber. Without a word he bent to the arms store and lifted out a long metal rod with six propeller-shaped blades dangling from its end. With practiced ease he fitted the rod into

an interlocked network of bars and swivel joints that opened into a tripod structure that braced against the walls. The rod with its blades protruded just beyond the chamber opening.

"Give me a hand with this pump," he said, hauling a generator from the pile of equipment. It was a hefty hand-crank generator on a tripod, with handles to crank on either side. He attached it to the end of the metal rod, sat down behind it and began furiously bicycling the handles, till the generator whirred to life. As he pumped faster and faster, the blades lifted and began to spin, forming a deadly circle of sharpened steel just beyond the chamber opening. Sparks leaped off the blades. Anything walking into that swirling circle would be sliced apart.

"I said give me a hand, dammit!" he yelled.

The woman ignored him.

He continued bicycling his arms

furiously; then his brow furrowed and he slowed his movements, gradually letting the blades droop. Finally, he stopped the cranking and the sparks died and the blades fell. He turned to look at the woman. She was grinning nastily.

"Thanks for the help, bastard," she said, smiling.

He started to rise, his left hand forming into a fist; she saw the movement and stepped quickly to the arms store, picked up a mace constructed of a hexagonal chunk of greenglass, studded with sharp points on its planed surfaces. "You don't want to try that, Noah." He settled back behind the hand generator.

"I should've known," he said. "I didn't hear the song."

"You should've known a lot of things, like how to get out of here. But you never learned." She dropped the mace back into the pile of weapons and returned to the ingots of food. She lifted one in each hand and took two steps toward

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Zip _____

the depleted pyramid of ingots against the curving rear section of the chamber when Noah rolled out from behind the generator, got his legs under him and sprang up in her path. Without taking aim he jacked his left fist into her stomach. Claudia staggered backward, the ingots falling to the floor. The force of his blow doubled her over, even as she stumbled away from him. He followed her, moving in from the side, his eyes narrowed; she tried to keep away from him, but he backed her around toward the tangle of woven mats and fiber blankets that served as sleeping area. The pain in her stomach kept her from straightening up, prevented her from taking an offensive stance against him.

Suddenly Noah rushed her, and she tried to pivot out of his way; her feet tangled in the sleeping gear and she went down. As he rocked back to kick her, she scrambled sidewise, flinging the blankets with her feet; they snarled around him and he tried to stamp loose.

Almost casually, Claudia extricated herself as Noah spun about trying to free himself. She got to her feet, set herself with legs apart, and as Noah kicked loose of the blankets she gave a short leap and kicked him with the edge of her foot, squarely in the mouth.

He was lifted off the floor, arms wide, and was driven backward with such force that he hit the wall and crumpled up against it. He sank down, stunned, and lay unmoving, eyes glazed, blankets half-covering him.

"Take a little nap," she said. "I'll wake you when dinner's ready." She went back to the ingots of food.

It had left food. Then it had lounged. Drinking from them. But the greenglass walls came between them. Its thirst could not be slaked. It edged nearer. It drank but could not drink enough. It began to whine with the need.

"I wonder where the food comes from," she said.

"You always wonder where it comes from. It just comes, that's all. Stop talking about it." He ripped loose a warm chunk of the quarter-ingot and shoved it into his mouth. "It's rubbery this time."

"Fat lot I have to talk to you about if I don't talk about where the food comes from. How's your mouth?"

He touched his ripped lip. "It hurts."

She laughed. "Doesn't seem to be interfering with your gorging yourself."

"I have to keep my strength up. K's going to come soon; I can feel it."

She got up and walked around the chamber counter-clockwise. She always walked counter-clockwise. He walked around the chamber clockwise.

"You're making me nervous," he said, not looking up, "can't you at least stay seated till I'm done eating?"

"Your strength," she said, walking. "That's fabulous! Who saved your gut the last time? Your strength. Right, Noah: keep it up, so you'll have the wherewithal to scream for help during and cry a lot after." She walked. "Strength," she murmured once more, softly.

"Listen, dammit, if you don't like it here, why don't you just take off. There's a whole world of tunnels out there. Pick any one of them and just go."

She stopped directly in front of him, looming over him as he ate, her hands on her hips, balled into fists, her face reddening. "This is as much my chamber as yours. *You* get out. You're the one with 'strength'! Take your torches—your stupid torches—you've been working on them as long as I can remember—take the damned things and go find a way



out of the tunnels yourself!" She was trembling with rage.

Then they heard the song.

From the darkness beyond their living space the sound rose and fell, at first distantly, then nearer, rising and falling in measured cadence, each time climbing to a new level of intensity that made their skin prickle and the roots of their hair itch. They could not move; there was a force, a restraint, a repulsion, an invisible spiderwebbing of tone that froze them where they were. No names for the sound it seemed to be. They had always been in the chamber and they did not have referents. They were held in stasis by the threat of the song . . . a song they could never identify as, perhaps, the shrieking wail of flying reptiles on the wind.

K was coming for them.

Abruptly, as if wrenching themselves from quicksand, they began to move, very quickly now, as the song grew louder and closer.

It drank from their mutual hatred and their fear. A pool dark and thick and bubbling. Without bottom, without the possibility of depletion. It drank and was still thirsty. It had not always been in the labyrinth. It had come from a far place, through a maze of quite another sort; how it had come to be here, it did not understand. There were many things it did not understand, things only vaguely realized, needs that were overwhelming, powerful, all-consuming. How it had come from that far place to this place was beyond its ability to understand, but it knew it could never return, and it had been sad, tormented, lost and alone; and it had begun to starve. Then it had chanced upon them, and they had fed it, as it lay in shadows watching them. And it had taken them, and wiped them, and constructed this place, and they had existed together symbiotically for a very long time. It meant them no harm, but that was something they could never know. If they knew, they would stop feeding it, and it would die. Crying with the need, it came to them, periodically, and their terror and their loathing for one another sustained it. At times it gave them dreams, and they began to call it K; that was their interpretation of its concept for itself. And it had come to call itself K, as well. But as time passed, it felt the need for more; for greater draughts of what they felt; and so it came to them, wailing of its need.

"There, down tunnel number two. You can see the light."

"For God's sake, Noah, those knives won't stop it; we've got to lay out the stickys."

He bicycled his hands faster and faster, the knives whirling at the end of the steel rod, their edges emitting sparks, tiny glass-cracks of electricity leaping from the circle of steel to the motes of tin in the ceiling beyond the chamber. Noah had begun to believe they were not tin; he thought he remembered that tin was non-conductive; but he wasn't certain.

"It steps over the stickys," Noah said, breathing raggedly. "It can't get through this."

"What if it isn't solid flesh. What if it's just a gas or light or something elemental?"

"It can't be. If it were, we'd been dead long ago! Help me, here! My arms are getting tired."

He gave it one last furious revolution and leaped away. She slid into the position he had vacated and took up the hand-cranking without losing power. Noah went to the huge pile of torches he had wound with rags, and lit one from

the flame they always kept burning in the ingot pot. The torch had been soaked in a fluid that burned, a fluid they could not name but which they always found when they went to retrieve supplies left outside their chamber. The flambeau leaped into yellow-blue life and Noah positioned himself just inside the opening, directly behind the whirling circle of knife blades. They could hear K coming.

The light wavered and flickered down the tunnel, coming toward them like a fireball. "Here he comes!" Noah shouted. The song was overwhelming now, thundering against their ears in a rising shriek that was a mixture of pain and hunger and something else: an inarticulate ululation of nameless language, as though something unseen were trying to teach itself to speak with vocal cords that were never meant to form words.

And K rushed toward them.

They screamed, because they could not keep themselves from screaming, and something huge and flaming and shapeless boiled out of the tunnel, burning their eyes till they closed them against the sight, and they could not see K's shape—they had never seen K's shape—and the knives whirled as Claudia pumped faster and faster, driven on mercilessly by a fear that rose up in her throat and made her gag. There was nothing but fear at that instant, nothing but terror of being overrun by that thing from the second tunnel.

It ran into the blades, there was a timeless instant in which pumping grew more difficult, as though something were actually being chewed by the blades, then a terrible howl of rage and pain, and Noah hurled the flaming torch over the knives, into the very center of the bubbling light that surrounded K, and the light flared up as though dry tinder had caught, there was the whine of power being drained away, and then the boiling light that surrounded K receded quickly, back down the second tunnel.

And K was gone.

For perhaps the millionth time since they had been in the chamber, they had saved themselves. K was gone.

Claudia sank back upon the greenglass floor, her legs folded under her. She lay back and her dark hair, thick and long, formed a pillow for her head. She let her fear drain away in dry sobs that soon became soft crying. She rolled her head and upper body back and forth in helpless frustration. There was no end to this. It went on and on, without relief or hope of relief. She wept softly, but with deep sobs of fright and pitiful frustration.

Noah had slid down the wall to sit staring emptily at the far wall. His hands trembled uncontrollably. He wet his lips and wet them again, then again. His mouth was so dry he could not swallow. The chamber seemed to shrink around him. He could hear the last of the song as it trailed off into darkness, and he wanted to run. But there was no place to run. He was here, had always been here, would always be here. Without hope, without release, without peace.

He heard her crying and, on hands and knees, crawled to her. She felt his body touching hers and she reached out blindly for him. He came into her arms and they lay there on the warm, smooth greenglass floor, wrapped into one another against the darkness beyond.

After a while, as usual, they made love for a long time; and, as usual, it was very good for both of them.

Dimly, not really comprehending, it knew it had made a mistake giving them the knives and the thing they called a generator. It had lost great chunks of its body, left dripping on the rough-stone

walls outside the chamber. But it had responded to their thoughts, to their needs, and though it had not understood what the mechanism would do, it had given them the equipment nonetheless. They were linked together. Irrevocably. Eternally. It had to give them what they needed: but never their freedom. Freedom meant death for it, and only their hatred and fear meant life for it. Now it lay pulsing in a dark tunnel, its light dim and fitful. Great pain flowed through its entire bulk. It could not whine in hunger, the sound of flying reptiles on the wind. It could only lie there, heaped, and think of that far place of other colors and warmth that had been forever stolen from it. And it was still hungry. Very hungry. Hungrier than it had ever been before.

"I'm going to find a way out," Noah said. "I can't take any more of this."

"You say that every time K comes. Then you take forever to make torches

and you take one step outside, and the dark terrifies you and you come back with some weak excuse why the time isn't right."

"This time I'm going."

"You'll die out there."

"What the hell do you care?"

"I care because it'll be more difficult for me to fight him off if you get killed, that's the only reason I care. I despise you, your weakness, your viciousness, your insensitive stupidity . . . but I can't survive without you."

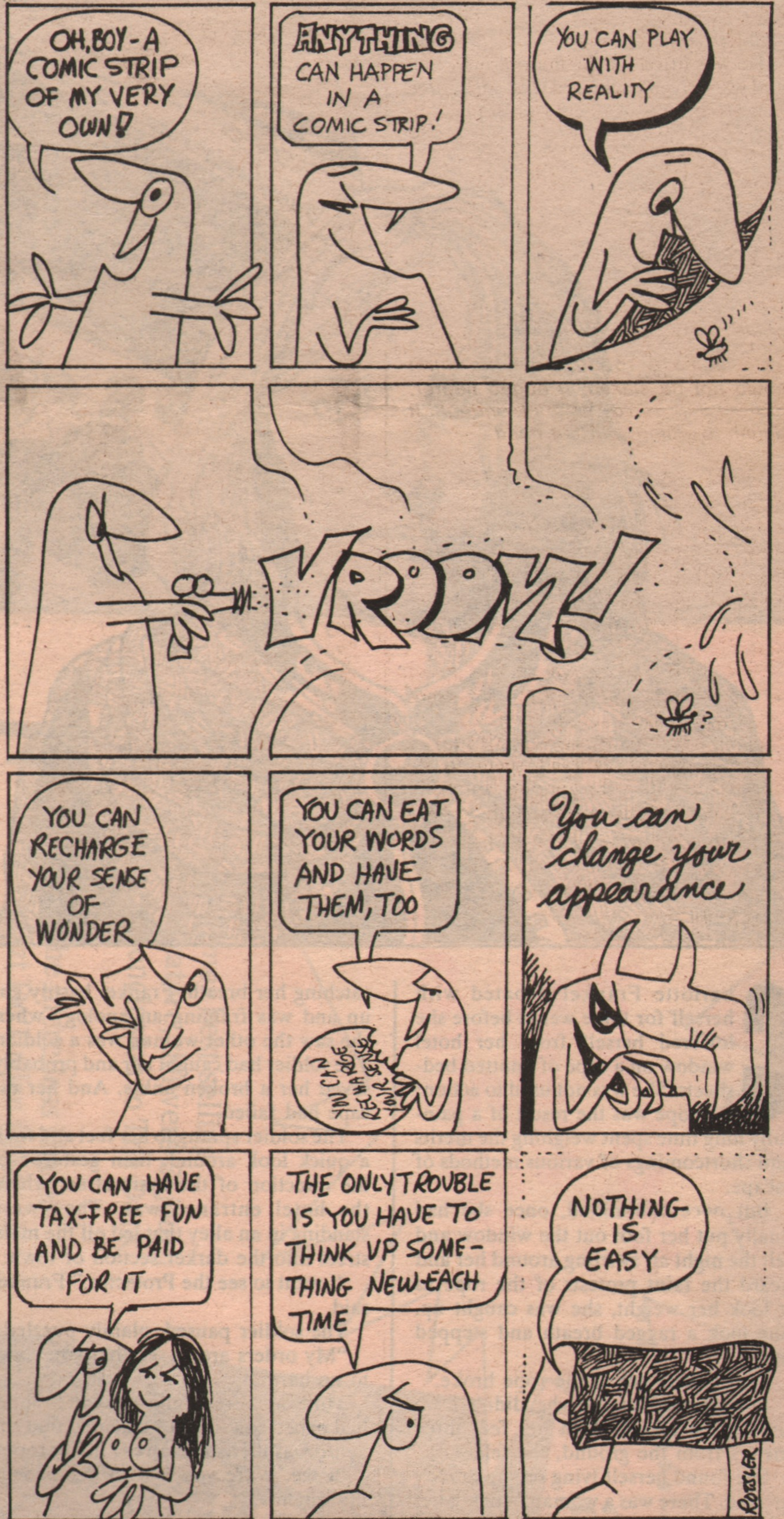
He stared at her with that bruised look she had come to hate more than any of the others, even the teeth-bared killing rage expression. "I've got to get out of here," he said, very softly.

They did not talk for a long time. If there had been sun or moon or stars or dusk or dawn or light or absence of light it would have been days. There was nothing to say to each other. There was never anything to say. They knew every-

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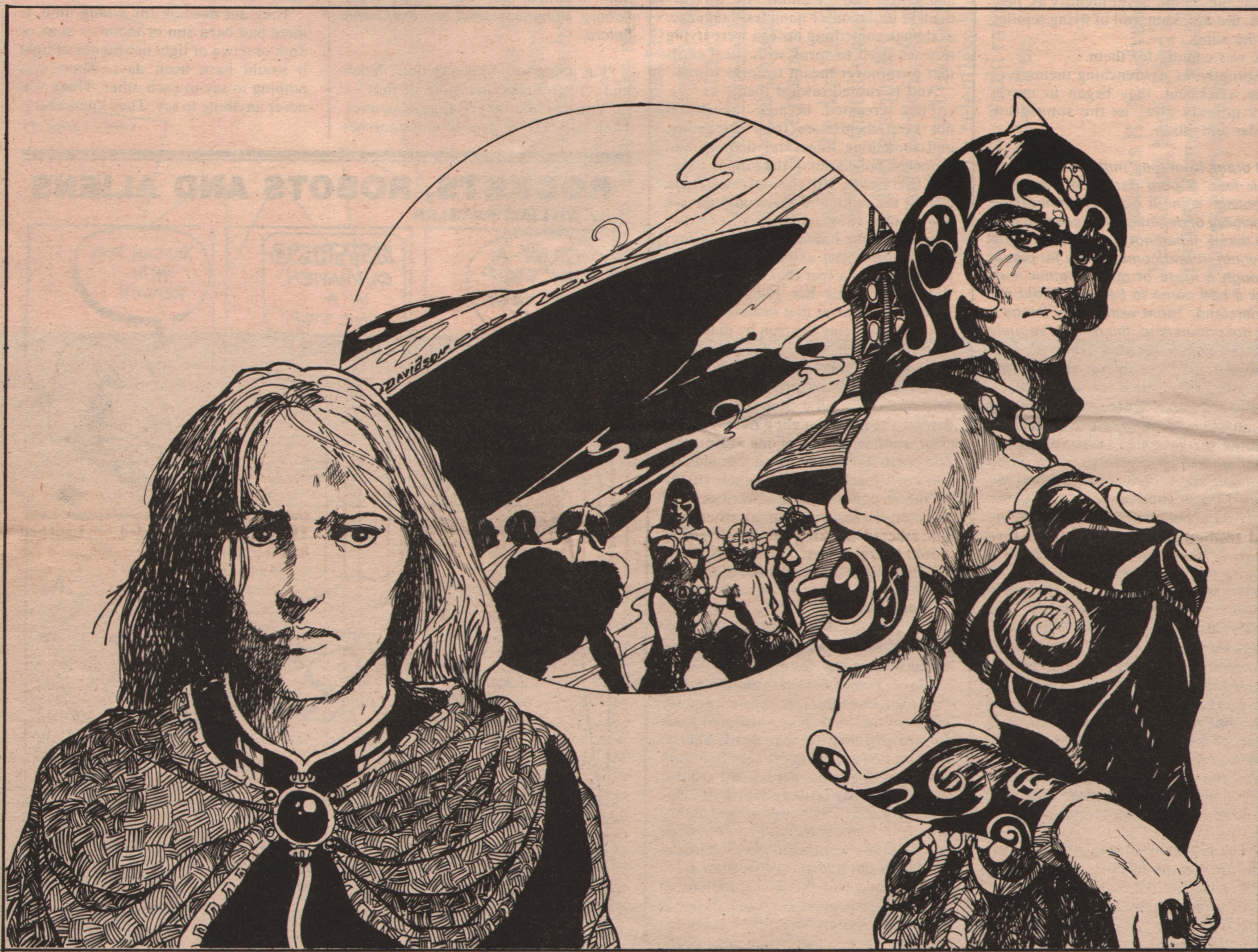
ROCKETS, ROBOTS AND ALIENS

by WILLIAM ROTSLER



a CHOICE OF enemies

fiction/JOHN VARLEY/artist/GREGG DAVIDSON



Charlotte Frankel debated with herself for three weeks before she lowered herself from her hotel window on a rope of knotted bed-sheets. She was not used to action; the rope was the result of a painfully long time spent weighing the merits and shortcomings of various methods of escape.

But once committed, once she had finally put her foot out the window and felt the night air swirling around her and heard the faint protests of the rope as it took her weight, she was caught up. She took a ragged breath and stepped out.

Two meters down, the rope broke.

It happened so fast she didn't have time to be afraid. With her feet three meters from the ground, she fell.

She found herself lying on the muddy ground. There was a woman beneath her who seemed to be having difficulty

catching her breath. Frankel hastily got up and was framing an apology when she saw the other woman was a soldier. The soldier had caught her and probably saved her a broken ankle. And her escape had failed.

The soldier sprang to her feet and took a quick look around, then gestured in the direction of the main street where the hotel entrance was. They were standing in an alley that led off the main street into the darker section of town.

"I want to see the Protector," Frankel said.

The soldier paused, plainly puzzled. "My orders are to see that you come to no harm."

This was more promising than Frankel had expected. She had assumed that the guard was there to keep her in her room.

"I see. Were you told to hamper my movements?"

"Not exactly. I wasn't told that you'd

be coming out this window. My job is to prevent any attempt on your life."

"What? You must be joking. In any case, I intend to go see the Protector. You can come along if you wish."

The soldier didn't like this at all. "I think I should see you to your room and consult my superiors. If you want to see the Protector I'm sure they can arrange it. Anyway, why didn't you just come out the front door? There are guards there to take you wherever you want to go."

"That's exactly what I don't want." She sighed. What to tell this woman? How far did she dare go? "Look. Where I come from, when people choose to leave a place as informally as by climbing out a window, you assume that it's either because they can't get out the door or don't dare use it. Or a little of both. I had to leave by the window because I have to talk to the Protector and if

my people knew it, they wouldn't let me. But I *have* to."

The soldier was interested now, and wary. It sounded like spying, which was good reason to be careful. But if it was spying, the state of Tyncassa stood to benefit. What could a soldier in the Tyncassan army do? Be careful, the soldier decided, but get this woman where she wanted to go.

"All right, you've convinced me. Now. Just how secretive do you need to be? Can you be seen on the street?"

"It's probably better if I'm not."

"All right." She fell silent and Frankel could almost hear the gears whirring.

"What's your name?" Frankel asked.

"I'm Captain Latil. Can you climb?" She looked at Frankel doubtfully.

"You just saw how well I can climb. But I might do better with you to help me."

Latil shook her head. "No good. I

The visitors were more than they seemed on the surface. But it wasn't until one of them deserted that Sheanne found out just how dangerous their hidden scheme was!

thought of taking you over the rooftops, but I wouldn't be much help to you right now. I broke a couple of ribs when I caught you."

Frankel looked at the other woman in amazement. She had not had any indication that Latil had hurt herself, other than a few seconds of gasping, quickly suppressed. Once again a Hanoverian had amazed her.

Latil was a hair over two meters tall, and massed almost twice Frankel's fifty-one kilos. She was dressed in dark pants and shirt instead of the usual comic-opera iron breastplate and leggings. Just the sort of outfit for lurking in dark alleyways. Her shaved head shone faintly in the glow of the distant gaslights.

The woman was an amazon, and Frankel was unabashedly afraid of her. More afraid than she ever remembered being of a man the same size.

She had evidently come to a decision, because she gave a low whistle and another woman sprang from the shadows almost at Frankel's elbow, startling her badly. She looked suspiciously at the other dark nooks lining the alley. She had studied it most carefully before climbing out the window and had seen nothing.

"Sergeant," Latil said, so softly that Frankel could barely hear, "fetch a man's cloak and hood. Send for a carriage. Despatch a runner to the Palace and tell the Protector that Captain Frankel of the Terran Mission will call on her in twenty minutes. Advise her that the Captain wishes to keep the meeting secret and ask her to designate an entrance where we can get her into the Palace quietly. Move."

The sergeant faded back into the shadows and was gone.

The carriage and cloak arrived in a few minutes. Latil gave Frankel the cloak, then behaved as if she were a man, preceding her protectively out into the main street and helping her into the coach. She trotted along beside the coach as it started off for the Palace.

Frankel spent the time rehearsing her speech to the Protector. It wouldn't be easy. She was going to expose herself as a fraud, and betray the orders of her Captain and, by extension, the purposes of the Terran Cultural Mission. It didn't matter so much except for the uncertainty surrounding her intended request for Hanoverian citizenship. She was burning her bridges; it would be nice to know she had somewhere to go after she did it.

The way to the Palace led by the harbor. She looked out the window at the sailing ships rocking at anchor. They loomed through the fog, skeletal outlines with their sails furled and dripping. There was the smell of salt spray; another storm was on the way. Frankel had lost count of the major storms in the weeks since she had arrived.

There was a commotion on the landward side of the coach. Frankel couldn't

make out the words, but it sounded as if someone was being challenged about something. She turned to look out and was roughly shoved, so hard that she came to rest on the floor. There was a sharp crack, and window glass showered down on her. She finally realized they were in trouble.

"Captain Latil," she called, but it was drowned out by a deafening explosion that rocked the coach over onto its left wheels with much straining of leather springs and tearing of wooden panels. A ball of fire billowed into the coach, and for a few minutes Frankel could do no more than lie there, trying to breathe oily smoke. She soon became aware that the coach was out of control, the horses panicked by the explosion.

Lying on the floor of the coach, she noticed only the things her eyes happened to be pointed at. That was how she saw the hand dangling over the side of the roof, loosely bumping against the unbroken window pane on that side as the coach lurched and shivered. It was almost invisible in the darkness. She couldn't put her thoughts together, but remembered thinking the driver really should be trying to stop the coach. Then the dark shape of the driver's body fell past the window.

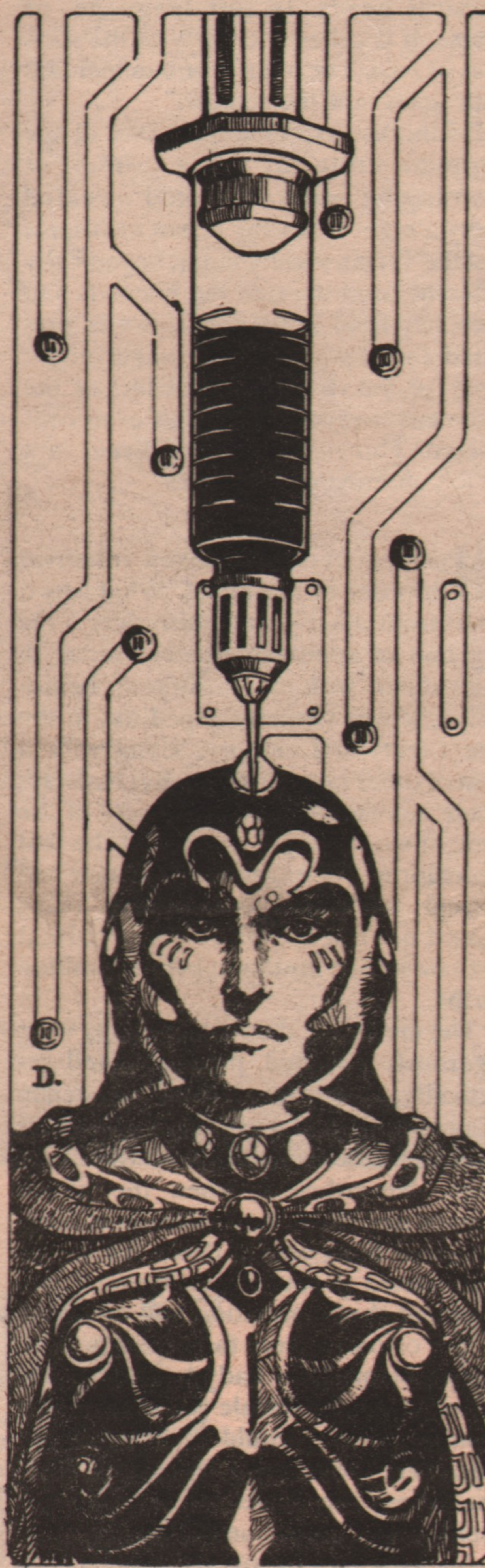
Somewhat to her surprise, she immediately knew she must somehow get outside and do something. Nothing in her life had prepared her for dealing with emergencies or even improvising her way through hardships, as her brief attempt at escape a few minutes before had brought home to her. But she knew she had to try.

When she grasped the handle on the door, she was almost pulled from the coach. Latil had been hanging on outside, and had picked that moment to open the door. Frankel got a fleeting glimpse of her, bleeding from many cuts, then the door slammed shut. She listened to Latil climbing to the driver's seat. There were two shots. The coach lurched, tried to rear up on its back wheels, then groaned to a stop.

They were in sight of the Palace, and a troop of guards was trotting out in formation, guns held ready. Frankel made out the bald heads and serious faces of some of the young women as they took up stations, facing outward around the leaning coach.

Her cloak was in disarray. One of the soldiers saw her face as she was helped out by Latil. So much for secrecy. The soldier was astonished, but quickly covered it. It was none of her concern.

Outside, she saw how the coach had been stopped. Both horses lay dead with their skulls pierced with bullets and their legs twisted. The coach had tried to roll on over them, but only made it half-way. What was left was a tangle of harness leather, mud, and blood that was almost black in the shifting shadows. She turned away from it and followed Latil into the Palace.



In her mother's time it wouldn't have been possible; no nation would have dared to send a squad of sneak-soldiers to do the job that should be done publicly, after proper ritual, in single combat in the arena. But times change. And what better indication of that ugly fact than the woman she now prepared to meet?

She went to her desk and cranked the gold-inlaid box there, spoke into it long enough to determine what she had suspected. The Terran woman had survived the attempt on her life. With Captain Latil guarding her, Tannabil would have been surprised at any other result. Latil was a woman to watch. She had finished fourth in the last Challenge, just missing her chance to try her strength against the woman she was sworn to protect. But in the meantime, she was utterly dependable, a gentlewoman of the old school to whom honor came before life itself. Latil would take her job if she could get it in the arena; until then, she would devote her last breath to protecting the Protector.

Charlotte Frankel was ushered in shortly, still escorted by Captain Latil. They were both disheveled, but Latil had had the worst of it. She maintained the stolid indifference to pain that her temperament required, but she was in need of medical attention. Tannabil dismissed her and invited Frankel to have a seat.

Charlotte Frankel was beginning to understand how narrowly she had escaped. She tried to control the shaking of her hands, to conceal her fear in the same manner that Latil had done. She was not notably successful. When she shrugged out of the cloak, tiny shards of glass tinkled on the stone floor and she stared dully at them, unable to remember how they had gotten there. She had a bump on her forehead which was smeared with mud from unconsciously wiping at it with her hands. Tannabil realized Frankel was unable to initiate the conversation in the formal manner.

"You had something to say to me," she prompted.

Frankel was shaken back to life. There should have been a ten-minute exchange of pleasantries preceding the opening of their talk. She opened her mouth to start her meticulously rehearsed statement, and looked at Tannabil. Not for the first time, her breath was drawn away by the powerful aura of the woman.

As befitted one who held office by being able to defeat any and all of her contemporaries in bare-handed combat, she was tall and heavily muscled. At first, Frankel had been revolted by the appearance of the Hanoverian women. Gradually she had come to see the beauty of them. She had joked with the other women in the ship that all Tannabil needed to look just like a man was a beard, but she knew it wasn't true. Despite the strong cheekbones and the large biceps and the heavy brow and chin, Tannabil was completely a woman. Frankel was at a loss to describe it. The woman looked nothing like any other

female she had ever seen. What makes a woman, anyway? she had asked herself when she got totally confused. Was it breasts? Tannabil's were less noticeable than Frankel's. Was it clothes? That was utter nonsense.

She had once studied a cartoon, one illustrating a little boy and a little girl. Both were drawn as simply as possible; just a few artful strokes of the pencil. Analyzing the drawing, Frankel had been forced to conclude that the only difference between the two faces were two tiny lines by the eyes of the female figure. Yet those lines established the sex of the drawing with absolute certainty. She had decided it was a cultural thing, and she was too immersed in the culture to draw away from it and be unbiased.

Seeing Tannabil again, she was back where she started. She could never be mistaken for a man, yet she looked so startlingly like one.

She put it out of her mind with an effort and concentrated on the hairline scars on Tannabil's cheeks. She found that by looking at them and not at the rest of her face, she could talk.

"Protector, I've come to you to admit that I and the Terran Mission have been deceiving you these three months. From our first meeting, we have misrepresented ourselves to you. I have found that I can no longer support the subterfuge. It seems . . . well, let me just say that my sympathies now lie with the Hanoverians, rather than the Terrans."

Tannabil was slow in her reply. "First, it will be difficult for you to support the 'Hanoverians.' They won't let you. By that I mean that we are not politically organized as a planet, as you Terrans seem to be. If you feel sympathy for us, you must express it in terms of one of the nations that exist on the planet."

"Nevertheless, it is all of Hanover I feel loyal to. And more specifically, I

She didn't know just what was going on, but The Protector knew that there was something happening where the two cultures were meeting, and that something was dangerous.

feel loyal to you. And not as the Supreme Protector. As a person, I can no longer go on deceiving you; I find that I respect you too much."

Again the Protector paused, choosing her words.

"That's a flattering thing to say, since you must have viewed me as an opponent during most of our relationship. But on the matter of the things you plan to reveal to me; maybe I can make it easier for you if I say that I know at least some of it. You are not the Captain of the Terran ship, nor the leader of the mission. I have known that for some time."

Frankel could only stare. Tannabil had never given her the slightest hint that she knew.

"How . . . ?"

"Oh, you were marvelous. Don't worry that your performance was suspect in the least. It was the expressions on the faces of those ridiculous males that attended you, trying to walk behind you, pretending to defer to you. You, who barely reach to my shoulder while they are as tall as I. You are quite the smallest woman I have ever seen, while those men are huge brutes. That was enough for suspicion, but what convinced me was the way they looked at you. They were always telling you with their eyes that they would have things to say to

you later. It didn't seem wise for me to expose the charade. Who is your real Captain?"

"Gowan."

"As I thought. There was something in his manner that groaned each time he addressed you as 'Captain.' It must have been terrifically hard for him. Why did he do it?"

"Because I recommended it. I am a scientist, in a discipline that doesn't seem to have arrived on your planet as yet. The Terran word for it is 'Anthropologist,' and it means the study of the customs and beliefs and institutions of women. Of the societies that women have created in response to varying physical needs. In our language, of course, it is called the study of the societies of *men*. The male pronoun includes both sexes, not the female."

Behind the expressionless face of the Supreme Protector was a turmoil of rearranging ideas. She had sweated many a night when she began to suspect that the Terran society might be radically different from the one she knew. It had been her fond hope that she was prepared for any surprises Frankel might have for her. But the small fact of the pronouns was one she hadn't even considered. Things would be *different* in a society dominated by males.

Hemophilia is a sex-linked, inherited disorder of the blood. What sets it apart from other genetic disorders is the big rate of spontaneous occurrence in individuals with no history of hemophilia. It was virtually wiped out in the late twenty-first century, along with a host of other rarer diseases. But it always made a comeback. In the society of the time, it would never go beyond the first generation. The eugenics legislation had enough teeth in it to prevent it being passed on. But it continued to occur, at the rate of one mutation per five million births.

The crews for the first starships were rigorously screened, physically and genetically, and it was beyond the realm of possibility that a gene for hemophilia could have been included on any of the ships. Nevertheless, when the fifteen women and three men colonists of Hanover had been settled down for a year and started producing children, it was apparent that a mutation had occurred.

The colonists were faced with a terrible problem. They had two hemophilic males and three female carriers on their hands, and they could ill afford them. The stars were being colonized on a shoestring, the limits of fuel requirements, vital cargo, and payload space being what they inevitably were. A crew of eighteen had a statistically small enough chance of survival without the added burden of caring for genetically damaged children. On the other hand, every possible new child was needed to help the colony past the critical first forty years, when fifty per cent of all colonies failed.

The ship that landed on Hanover was the eighty-seventh human attempt at colonization, so there was a considerable body of written precedent for the crew to consult. But there was no record of a similar occurrence in the annals they had brought with them. They decided to let the female children live, and let the males live or die with no special efforts to care for them. The male crew member who had fathered the five children was sterilized, and the female children were to be sterilized after the arrival of the second colony ship, twenty years after the first.

Long range plans are perilous at best, even in a stable civilization. In a colony struggling day to day for its very exist-

ence, they can be forgotten in a few years. The last sub-space message received on Terra from the Hanover colony told of a plague that had killed ten of the original colonists and twenty of the second generation. It was decided that the carrier females should be allowed to breed after all, to provide the necessary numbers to stave off total extinction.

The second colony ship was lost in transit. The third was being built for an emergency mission when the Great War intervened. There would be no more starships from Terra for two thousand years. Somewhere around the time of the Great War, the Hanoverians discovered that the new hemophilia mutation was genetically dominant, but by that time it was too late for following precedent. The Hanoverian technical civilization was in a rapid decline, and would soon fade into an extended bronze age.

Their customs were not the customs of others. That was to-be expected. But little could they imagine how impossibly different their customs had become in the years since they had been lost.

Somewhere in those years while you struggled back up to the level you enjoy now," Frankel said, "the gene was completely diffused in your population. The result is that all your male children, and twenty per cent of your females, lack the clotting factor in their blood.

"The inevitable result has been that females dominate in your society, and males are sheltered and protected from danger. You have the initiation rite of femicision, where you incise the cheeks of each of your girl children. If the blood clots, they live; if it doesn't, they bleed to death. There have been other sex-linked mutations over the years. Women grow stronger and taller than men. Childbirth and pregnancy are easier for you to survive now that you are larger. On Terra, pregnancy is a medical problem, and women enter hospitals to bear their children. Dying in childbirth is still common."

Tannabil raised her eyebrows. To those who knew her well, this was an indication of extreme shock. She had birthed her last child during the last conference with the Galkai delegation. She had taken a two hour recess to be alone for the actual delivery, then handed the child to one of her wives for nursing and returned to the conference.

"I've been especially interested in your marriage customs," Frankel went on. "The high rate of infant death among males, and the average life-span of twelve years has produced a four-to-one ratio of adult females to adult males. There are several possible social solutions to this situation, but your society adopted a type of polygamy, forming families of many females and from one to five males. Your confederation-type nations probably arose from that type of clannishness."

Tannabil had determined when the Terran delegation landed that she was not going to make the mistake of seeing the customs of her people as the laws of the universe, but Frankel was rapidly getting over her head.

"Excuse me, would it be too much to ask for you to tell me a little of how you do things on Terra? You are commenting on things that are familiar to me, without giving me something to

contrast them to."

Frankel had been warming to her subject, seizing on the familiar form of a lecture to re-order her scattered thoughts. Now she was jerked back to alertness by the realization that she was not addressing a group of note-taking students, but the head of a nation. The paper she had started about the socio-sexual customs of the Hanoverians was never going to be delivered on Terra, and this certainly wasn't the place to haul it out. She had a case to sell, she chided herself, and she had better start putting it over.

"Sorry. You're right. On Terra we have a monogamous system. One man marries one woman, and they each raise the children. Or, more often, the woman raises them and the man works to support the family."

Tannabil's eyebrows threatened to lose themselves in the wrinkles of her forehead.

"Is that so? What do your women do for sex?"

Frankel cleared her throat. She had known this would be the hardest part.

"That's rather delicate for me to tell you about. I'll try. On Terra, sex between women is not well thought of. It's . . . well, it's said to be a perversion."

Tannabil got up and walked around the room to get her thoughts back in order. She had been prepared for surprises, but this! To Hanoverian women, men were too precious to be viewed as sexual partners. And much too delicate. Male-female intercourse was something to be approached cautiously, with careful ritual and delicate preparations. It was an unpleasant task, but one that had to be done to insure the survival of the race. Sex was always with another woman.

"You're saying you get your sexual gratification from . . . *that*?"

"That's right. Or at least that's the only socially accepted way."

"Very well. I'll accept it if you say so, because I haven't yet found a reason why you should be lying to me. Nor why you should construct such an incredible lie if you intended to gain my confidence. Now, to get back to that. You have come to me to reveal a subterfuge on the part of the Terran delegation, one that I was marginally aware of already. What had puzzled me about this deception from the first, and almost made me discount my feelings about what I saw and heard is this: why the deception? Why would you attempt to keep the true facts about your delegation from me? You say you are the one who recommended this ruse, and I assume you came here to reveal your reasons to me."

Frankel lowered her eyes. She was acutely aware that she was in a dangerous position. Tannabil could still have her returned to the hotel, and there was no telling what Gowan would do if he

All she wanted from her visitor was the truth that had been hidden in the alien spaceship. And when she discovered the truth, she knew it was the end of her world.

heard the truth of the situation. But she was committed, and had to go on with it now. It was far too late to turn back.

"I don't really know why I did it at first. That's the honest truth. We had orbited your planet for weeks, studying you through telescopes and matching what we saw of you with the fragmentary records we had from before the war. You are a lost colony; the data that described

where you were in space was destroyed in the war. All we had was the record of what happened to you after you got here. We matched what we saw of social conditions with our information, and I decided you must be the Hanoverian colony. That was a major coup for our expedition. Captain Gowan was well pleased; it would mean a promotion for him when we got back with the news.

"He was all for just landing and announcing ourselves and offering you a seat in the Terran Council, but I persuaded him that we should move more cautiously. I wasn't sure how you would take to finding out that your planet is out of step with the rest of humanity. You are the *only* people we know of that have gone beyond female equality—which is professed to one degree or another by most civilized planets—gone beyond that to female domination.

"I'll confess that my initial reason for suggesting the masquerade was that I wanted an opportunity to study your civilization close-up, before we Terrans moved in and first altered, then destroyed your way of life." She said it quietly, without any emphasis, but it had its desired effect.

Tannabil arose from her chair and gave Frankel a look of such menace that Frankel—who had been expecting that reaction—felt her spine freezing solid.

"Are you telling me that the Terrans are planning to wage a war with us? Are you here only to spy us out and report back before an invasion?"

"It's not as simple as that."

"Go on, please." She sat down again.

"This will be hard, since you don't know any sociology. It has to do with

the effect of an encounter between a technically advanced culture and a primitive one. Sorry."

"I accepted that we are primitive compared to you the first time I saw your ship flying. I have a scientist who says we could build a flying machine, but she estimates it would be another century before we could build one like yours."

"I'm sorry to say it would be even longer than that. But you shouldn't waste time worrying about a war with us. When the Terran Council destroys you, it will be a case of killing with kindness. And it will be more devastating here on Hanover than in any place I can think of. Because your way of life won't assimilate with ours, and the only alternative will be destruction. You'll find us irresistible."

Sheanne Tannabil, the Supreme Protector, was in no mood to be protected tonight. She stormed down the marble stairs of the Palace and ordered that her horse be readied. When she was told it would take five minutes to get it from the stables, she heaped abuse on the unfortunate private who had guard duty at the rear entrance.

"That horse should be *ready* when I want it," she fumed. "What has this place turned into, a nursery? Has it been that long since I rode on my own horse, alone, without a troop of guards? Am I not the Protector? Do any of you deny it? What about you, soldier, are you ready to take me on in the arena?"

"Your pardon, Protector," stammered the unlucky woman. "The horse is on the way now. I'll go see to it." She left in a hurry.

The horse arrived, in company with a platoon of the Palace Guards mounted on horseback.

"It seems that my orders were misinterpreted," Tannabil said. "I wish to ride to my residence, and I will do it alone. Back to your quarters, all of you."

"Protector," said the lieutenant in charge. "Captain Latil left strict orders that you were to be guarded with particular care this night. You see, the Galkai raiding party that ambushed the Terran Captain has not been totally captured as yet. And we believe that there may be another commando group intending to attack . . ."

"I saw Captain Latil only three hours ago, and she made no mention of challenging me to duel. In that case, Lieutenant, who is the Protector?"

"Your pardon," the woman said, hastily, seeing how dangerous her situation was. "Your orders will be obeyed. COMPANY!" she bawled. "Back to the guardhouse, on the double."

Tannabil swung astride the horse and let the soothing rhythm of the saddle wash away the complexities of galactic alliances. She dug her heels into the animal's flanks and felt the exhilaration as he charged through the open gate. When she arrived home, she would wrestle with the problem Frankel had laid at her feet; for now, she was alive for the first time in months, with the damp night air streaming over her bared teeth.

She rode into the wind, with the howling gale that the evening had promised boiling in front of her. It was going to be a big one, but she didn't mind. She wanted turmoil, to match the

turmoil inside her. Tonight she would make a decision that would alter the course of all her people; both the nation of Tyncassa, and those she had called her enemies. It only seemed right that the elements were responding with a hurricane to match the occasion.

The Terran Council will swallow you up, Frankel had said. Hanover would not have a chance. It was to be a pawn in a game of interstellar politics.

What no one in the Terran delegation had told her until tonight was that there were *two* interstellar councils: the one dominated by Terra, and the one controlled by New Earth, the oldest colony world. The two were in fierce competition. As yet, the struggle was mostly economic, but it was getting rougher. Frankel said she thought war was at the most fifty years away.

"You will be drawn into that war if you sign a treaty of cooperation with the Terran Council. You will automatically become the enemy of Terra's enemies. But by the time war comes, it won't matter much. You will no longer exist as a separate culture."

Separate culture, aboriginal assimilation, technocratic diplomacy; Tannabil's head was swimming with new concepts that she wasn't sure she had even vaguely understood. The "Hanoverian Culture," for instance. Before tonight, she had not even thought of such a thing. What was it, and was it even worth saving? If it was, as she thought, the basic moral code she lived by, she thought it *was* worth saving. But what if she was just taking the provincial viewpoint of an ignorant savage? Would her people thank her for saving disease, starvation, ignorance, and poverty for them to enjoy while sacrificing the undeniable miracles of Terran civilization for something as abstract as "Hanoverian Culture?"

Those miracles: Frankel had said that the bleeding disease could be cured. Wonderful, fantastic, beyond her wildest dreams! And yet, she had to know the price. It sounded like a miracle, something any sane individual would accept instantly. But as of now, she was the only native on the planet who even knew what the "bleeding disease" was. To everyone else, it was as natural a part of life as arms and legs.

She spurred on into the teeth of the gale, and saw something on the road ahead. Something that looked like a group of people. They seemed to be crossing the road, and they were in a hurry about it. At this time of night it could be one of two things: one of her own patrols or an enemy raiding party. She drew her ceremonial sword and charged into them.

She was through them in seconds, and her instincts had been right; it was Galkai. They had seen her and had a chance to make ready for an attack, but her all-out assault was something they had not counted on. She bowled them over before they were fully deployed, slashing right and left and connecting twice with flesh. There was no sound but the beating of the horse's hooves; they were commandos, trained to remain silent. But she had hurt them. There was the discharge and blue flash of a rifle behind her and she laughed out loud. Now the Tyncassan patrols would find them easily.

She hurtled on through the night, her problems forgotten in the cleansing heat of personal combat.

She entered the warm, familiar foyer of her home and was greeted by three of her wives. They were startled at the unscheduled return, but happy to see her. She kissed them warmly, and relaxed as she never could in the Palace.



There was no need of guards here. Any of the twenty women who shared the house would fight to the death to protect any of the others. She was always more comfortable when protected by bonds of love rather than bonds of duty.

"Is Allain still awake?" she asked of one of the children who swarmed around her, helping her with her cloak, pressing a mug of hot brew into her hand, searching her pockets for treats. Visits from Sheanne were rare, and the children made the most of them.

"He went to bed an hour ago. But he'll want to see you."

Herran, the eldest wife, nodded at Sheanne. "I'll go see that he's awakened."

Later, after cutting short the greeting

ritual by pleading pressing business, she walked down the short flight of stairs that led to the basement and the men's quarters. The suite, by custom, was located at the center of the concentric rings that composed the house, and on the lowest level. It was the most easily defended position. Here, a decimated family could make a last stand against raiders intent on carrying off their men, and if necessary, die to the last defender. That it had not been necessary for more than three centuries hardly mattered. The men's quarters in any respectable house were in the center of everything.

She knocked on the door, the door sanded for months beyond the remotest possibility of a splinter, and was told to enter.

The room where Allain lived was plain, and rounded. Nowhere in the place was there anything like a right angle, nothing to cut or bruise the skin of its occupant. The wife who had the door duty for the night frisked Sheanne carefully, found nothing on her costume that might injure the man, and passed her through.

Allain sat up on one elbow and smiled tiredly.

"Sheanne! I'm so happy to see you. Where have you been? You said you'd come to see us more often."

She put on a smile, but she was sick at what she saw. He had gotten much worse. He didn't have long to live.

Allain hadn't been able to walk for the last three years. His knees were swollen, reddened globes, inflamed by blood lesions below the skin. No matter how carefully they were protected, the men always fell prey to internal bleeding, usually before they reached puberty. Allain was an old, old man by Hanoverian standards. He was almost twenty-four. There was an angry, scarlet spot that covered the left side of his neck that hadn't been there on her last visit. Beneath his nightshirt she could see the darkens that indicated a dozen more lesions. Any one of them could develop an infection and kill him within a few days.

"I try, honey, I really try. But something always turns up."

His gentle face darkened. "They're trying to kill you again. They won't tell me, but I hear. They were whispering about something tonight. Did the Galkai try again?"

"Yes," she said. She differed with some of her wives in always telling the truth to their husbands. Some of the family felt it only worried the men unnecessarily to know distressing news, but Sheanne reasoned that if kept in the dark, the men would only worry about what they weren't being told. "Now don't get upset. I'm not even sure they were out after me, and I got away from them easily."

She sat on the bed beside him and cradled his head in her lap. He looked up at her trustingly. She loved Allain intensely, and it was all the more intense because she knew he would be dead soon.

"Would you mind if I talked to you alone?"

"No, I don't mind. What do you want to talk about?"

"I have a story to tell you about the Terran Mission."

He was excited. He had pestered everyone for weeks to learn all he could about the Terrans, and had become peeved when he was not allowed to go out in his carriage to see them, even from a distance. Hanoverians were very conservative about their men, and would never take one of them into a situation over which they did not feel they had total control. No one had felt that way

about the Terrans yet, so no Hanoverian male had ever seen them.

The wife at the door withdrew to the outside and Sheanne started into her story. It went on for a long time, and she felt guilty about keeping him up this late. Herren would have a lecture for her when she went upstairs. But he listened with rapt attention.

She knew she wasn't really telling the story to him, but re-telling it to herself, trying to sort it out. She had used Allain before as a passive sounding-board for her own thoughts.

He frowned from time to time, struggling with ideas that were even more foreign to him than they were to her. His world for the most part had been bounded by soft, curved walls, and what he knew of life he had seen from win-

of doing things will go under beneath a more successful system. Their men will take over."

Allain sat up, startled.

"You mean they'll want our men to take over, too? Is that what they want? Because if they do, I'm even more against it. How could a man run a country like you do? They wouldn't have the tough-mindedness it takes, they'd be too silly and sentimental. No, that would never work. You tell them to go home." He lay back again, but he was upset. Sheanne soothed his brow, and chuckled at the thought of Allain trying to run the government: sweet, loving little Allain. Then the smile disappeared. What was so funny about that?

If the men were running the country, she asked herself, would we be in the

Their society was so different there was no chance it and the society of Earth could blend together. One would surely die!

dows, over the broad shoulders of his wives. But he thought of his life as full, because he wasn't impressed with the gifts of the Terrans.

"I think you should trust the Frankel woman," he said when she was through. "You said she wants to join us, throw in her lot with us. She doesn't want to go back to Terra with the others. Would she want that if she didn't think she was doing the right thing for us?"

"No, of course not. What makes me think even more strongly that she thinks she's doing the right thing is that she hasn't tried to hide the fact that there would be material benefits to our way of life in the short run. She expects our good sense to make us see the perils we'll encounter in the long run, and choose not to be tempted by the marvels they can offer us. One of those things . . . they say they can make it so that men don't bleed to death anymore. They can give you something called clotting factor that will make you as healthy as a woman."

"Oh, really? Well, that certainly sounds interesting. But what good would it do us if we are destroyed in fifty years?"

Sheanne barely heard what he was saying. She had thought of all that, and found herself pulled back and forth almost by the minute. Finding a course of action was hard enough without the realization that it would affect everything. But it was what she had elected herself to do; she was supposed to be a Protector. She would protect, if she could only identify the enemy.

"I didn't tell you what Frankel wants us to do with the Terrans."

"No? I guess you didn't. Well, I guess we just tell them 'no thank you' and they can go on their way, right? And when those others, those New Earthers, when they show up, tell them we're not interested."

"It's not that simple. From what Frankel says, it matters not at all whether or not we sign that agreement. They'll be here anyway, in larger and larger numbers. Missionaries, traders, con artists, exploiters of all kinds. And we'll get representatives from the New Earthers, trying to get us to come over to their side. And their men, their large, ugly men, will be coming. It won't be war. We don't have anything to fight them with on their own terms, and they won't fight us on ours. They'll just insinuate themselves into our way of life, and we'll welcome them because of all the nice things they'll bring. And our way

mess we're in with the Galkai? What's so good about "tough-minded" people running the country? The nation of Tyn-cassa was poised on the brink of yet another of the long series of border wars with any number of neighboring states, Galkan being only one of them. The Supreme Protector could not lay her head down without looking for an assassin in the bedclothes. What made her think women were doing such a good job?

For an instant, she was determined to sign the agreement. Let the men have a chance. They couldn't foul things up any worse than the women had. Then she remembered something Frankel had said, and sat down again.

"You know what happened when the women in our society got the vote? Nothing. Nothing got any worse, and nothing got any better. I know what it looks like to you, but don't believe it. Either sex, given the power, will make just as big a mess of things as the other one will."

She saw no reason to doubt it, despite her natural prejudice. What Frankel wanted to preserve was not a better way of life, but a *different* way of life.

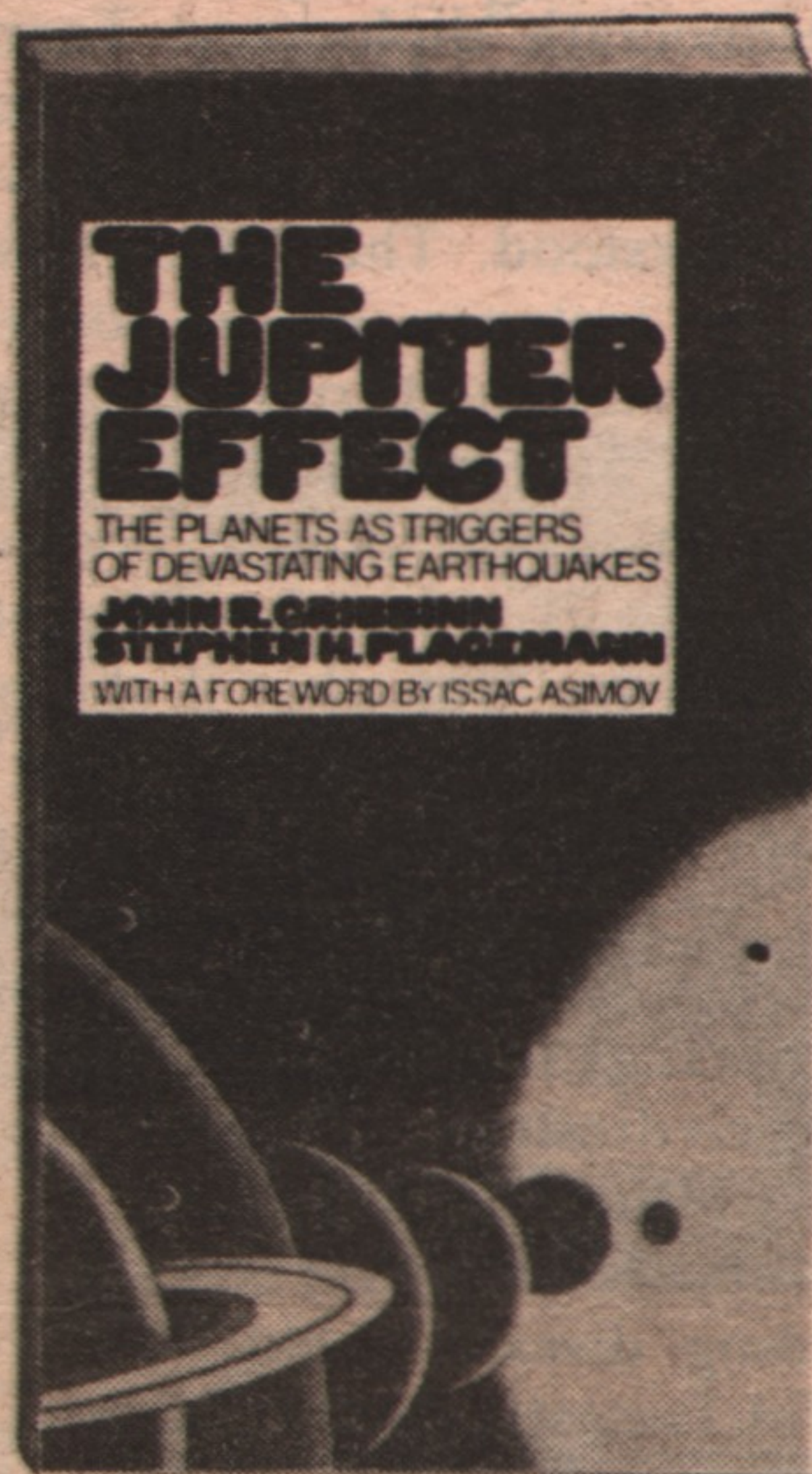
"Your society is so different from ours," she had said, "that there can be no real assimilation. You might as well be another species. None of the other colonies diverged as far from the norm as you did. Your society will change, if left alone, and it will do it as it must be done: gradually, a step at a time. If you try to swallow the whole of Terran society at one gulp, it will swallow you instead. As far as the clotting factor goes, your civilization will develop it independently, given time. Then there will be a time of changes, but you'll be in partial control of it. There will be emancipation of men, and you won't like it, but you'll get used to it. In another two hundred years your civilization will be in a position to meet the Terrans, if they haven't destroyed themselves again. That's why you must take this one chance and do what I say. You'll never get another."

Ah, yes, the chance. The magic instant that Tannabil must grasp before it flew away, never to return.

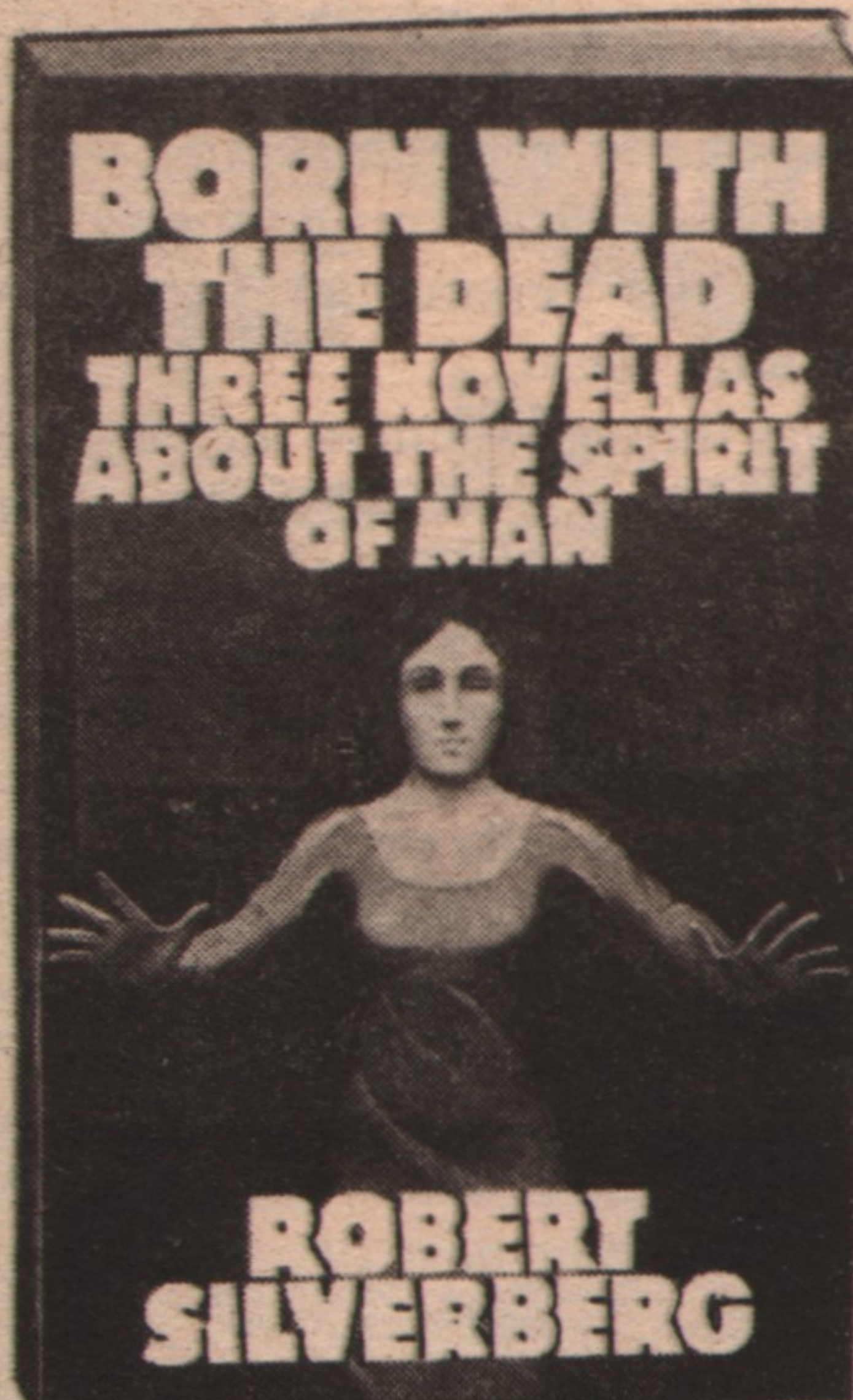
"I still didn't tell you what Frankel says we must do to keep the Terrans away," she said.

He looked up, tiredly. While she had been musing, he had lost interest or put the unpleasantness out of his mind; she couldn't tell which. He was a simple person, incapable of worrying too long

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about anything. He wanted the Terrans to go home, and that was that. He had been about to drift off into sleep, but roused himself again and tried to keep his eyes open for her.

She was flooded with tenderness for him, and it tore her to know she had the power to save his life. If she signed the agreement, the first shipments of clotting factor could arrive in less than a year. Allain had a fifty-fifty chance of living that long. He could be transformed from a bedridden, painful bag of bones to a running, laughing wonder, the likes of which the planet hadn't seen for two thousand years. To see him run . . .

"The Terran Mission happened on us by accident," she said, quietly. "They weren't looking for us. We are on the books as a failed colony, location unknown. It wasn't thought that any colonies had been planted out in this direction. Our sun is too red, or something. Too cold; that's why our winters are so harsh. She says they're harsh, anyway. This is a marginally habitable planet, and it isn't likely that anyone will come this way for a long, long time. Frankel says there used to be ways to communicate between the stars, but the knowledge was lost in the war and not re-discovered yet. So the ship that's here hasn't told anything to the Terrans; the Terrans don't know we're here. They don't even know where this ship is. If it's lost, they'll look for it, but not in this direction. They are here on Gowan's initiative and a lucky chance. So we have a simple expedient. If this ship never leaves Hanover, the Terrans won't find us for centuries."

She looked down and saw that Allain had fallen asleep. It was just as well. He wouldn't have approved of the methods she must use to detain the Terrans on Hanover. He was a gentle soul, and the conflict between what is needed and what must be done to accomplish it would have been too much for him. Leave such things to the tough-minded.

The methods she must use . . .

She saw in that thought that her decision had already been made, well before she came down the stairs to see Allain. And she saw why she had come here, more as a test of her own conviction than anything else. If she could look at Allain, talk to him; if necessary, hear him tell why he thought the agreement should be signed, and *still* know that her decision was right, then it *was* right.

She would do as Frankel said.

Frankel had seen that the Terran delegation on Hanover was vulnerable at this moment, and never would be again. There was a peculiarity of the Terran ship that her troops could exploit and thus disable and capture by treachery a machine that could easily level the entire capital city. For some reason, the ship could not move an inch as long as the outer of the two doors leading inside was open. If that door was blocked open—by dead bodies if necessary—the ship would never take off. It could be done by attacking without warning and with sufficient determination.

She must warn the commanding officer that regardless of losses, that door was to be held open and the vital systems of the ship destroyed. Perhaps she should go to the ship. With her visit as an excuse it might be possible to avoid any losses at all, to take the crew totally by . . .

With a shock, she realized where she was. Guiltily, she removed Allain's head from her lap and walked to the door. She felt sick; such thoughts had no place in his quiet, peaceful world.

She opened the door and walked up the stairs to deliver Allain's death sentence. ○

TULIP, from page 30

under cover of his wavering, moved to the position he wanted.

Scowling, Zaird bent and rubbed his bitten ankle. Westman saw no blood, but against dark socks it might not show. The man said, "Get on with your act—make the damned monkey open the door. And hurry up."

"I'll do what I can." *And that*, he thought, *is utter truth*. Tied now, he could not sign; he repeated the verbal orders and occasionally tapped a heel three times against the floor. Tulip fidgeted and grimaced but did not leave the corner.

Zaird walked over and pointed the gun at his head. Westman said, "I'm doing the best I can. You'll just have to be patient," and the man moved away

again.

He went to Maurine. "You tell her, too. Maybe with both of you—" Tight-lipped, she shook her head.

The gun hand raised; Westman said quickly, "Do it, Maurie." So the woman duplicated Westman's efforts—all of them. Tulip stayed where she was, but her fidgeting became more and more restive.

Westman thought, *there's too much time left. I'll have to try it.*

At first he thought he had miscalculated, that the outlet was too high. But twisting his wrists painfully against the wire he turned his right hand up, and reached it. His fingers grew numb—first the appliance plug would not move; then he was afraid he would pull it all the way out, and lose it. While never paus-

ing, always repeating his commands to Tulip . . .

He braced against pain and shock, hoping his face did not show the effort. He probed with the protruding end of the wire that bound his wrists—up and down, back and forth—and then it happened. The wire bridged the plug's exposed prongs.

The shock galvanized him. Peripherally he saw the flash reflected from the wall, as molten metal splattered his wrists.

But the lights went out—and freed from his momentary paralysis, Westman rolled to one side. The gun's report crashed in the small room; Westman heard the bullet splat into the wall above him. Then he heard shouts, Zaird's and Maurine's, but could not make out the

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words.

He tapped one heel three times, and again three. Zaird's voice came. "Tulip! Open the door. Open the door. God-damn you!" Then, "Let go, you bitch!", and a thud, and someone scrambling.

"Maurine! Are you all right?" Then, realizing the danger, "No, don't answer!" Nearer to him now, the scrambling noises ceased.

Only the dim green light above Tulip's console broke the darkness. It told Westman that the testing equipment was still working, drawing current from its separate circuit. Well, he hadn't really expected to get the main breaker . . .

Dimly he could see the crouching, shadowy figure of Colonel Zaird, terrorist and would-be kidnapper. The man

moved to Tulip's control panel. "All right, I'll try it myself. Anything a monkey can do—and seven twenty is just the outside possibility. I could get lucky." Then, over his shoulder, "When that door opens, Westman, you're a dead man. I don't forgive treachery."

Now the green glow, very faint on the wall, outlined Zaird's silhouette. From outside, a buzzer sounded and Westman knew a red light was blinking also. Zaird had completed his first attempt. Then, over and over again, the buzzer sounded, as the man punched sequence after rapid sequence.

Westman knew he could not wait on luck; Zaird might hit the combination at any moment. Twisting back and forth, he put pressure—more pressure than he

thought he could stand—against the hard wire, trying to bend it repeatedly, hoping to break it in time. He had to try—and he did, heart pounding and breath coming fast and shallow. Warm blood oozed down along his palm but he could not allow a little blood to matter—he kept trying. At first he worked as quietly as he could, but now Zaird was shouting; cursing; the noise didn't matter, either.

A hand touched his knee. He whispered, "Maurie?"

Very softly: "Can I help? Or should I try to tackle . . . him?"

There was no choice to make. "Stay here. He's crazy now—if he wasn't already. But maybe—the wire, behind me. See if you can untwist it, if it hasn't welded itself together." He felt her hands at his wrists, but just as she began to move the wire, the door burst open.

Again a shot exploded the air around his ears; he saw figures wrestling and falling. Then a light blinded him.

"Are you all right, sir?"

Bandages circled his wrists; on his lap Tulip nibbled grapes slowly, one at a time, while he sipped Doctor Kawahara's bourbon, diluted only by ice cubes. Maurine sat next to him, one hand on his shoulder. Across the kitchen table Police Sergeant Lantry asked questions and took notes, while technician Degardis enjoyed the plaudits due him as rescuer.

His testimony was already on record: "I came on shift and kept hearing the buzzer—on and off, a whole series of failures and the red light to prove it. That didn't fit, not with Tulip, and she's the only one doing that series now. I came in here and nobody was on control, and I thought, where was Olivia? So I switched the screen on—got no picture but the sound worked. Well, nobody around here curses all that much. Doctor Kawahara a little sometimes, but not like that. And he's out of town, and it wasn't his voice anyway. So I dialed the emergency number; that's all.

"But sergeant, I sort of wish you had killed that bastard."

"Wrong. This way, shaken up as he was, he spilled quite a lot. We'll be rounding up some of his associates."

Now, Lantry said, "Okay, I see part of it, from what the suspect said before he got under control and clammed up. But I don't understand—" and he specified what he wanted to know.

"I had to knock out the lights," Westman said, "before Zaird caught onto what we were doing—he would have, sooner or later, and his kind of answer would be to use force on Maurie, hurt her. We needed time, until Degardis came on duty; I was counting on his seeing something was wrong."

"But you—"

"I was saying—and Maurie was, later—what Zaird wanted, but signing Tulip to stay put, and reinforcing that instruction by floor-tapping signals. She's good at those; she can feel the vibrations for two or three rooms away, if the place is quiet—not a lot of people walking around, I mean."

Lantry frowned. "Look—I know your little friend is a lot smarter than I would have thought. But how could you depend on her to know what to do when you were saying one thing and—what do you call it? signing?—another?"

Maurine squeezed Westman's shoulder and said, "That's the thing. Zaird didn't know. It's why I've needed to kill the lights." She smiled. "Tulip's brilliant, in her own way. If she weren't, she wouldn't be in the project any more. Because since two years ago, when she had a very bad fever and nearly died, she's been stone deaf."

Tulip ate another grape. ○

DREAM, from page 5

to assume liability. Even without the Dream Master you would probably have soon gone into schizophrenic withdrawal."

The voice seemed to come from the area of the kitchen table, but there was no one there.

She walked closer to the table. The voice increased in volume.

"Yes," Doctor Leibowitz continued, "that fault was not in our machinery, but in your mind. In the future, our customers will have to be more carefully screened. Of course, it's too late to help you and," the voice hesitated, its scholarly reserve dissolved into a hoarse whisper, "too late for me as well."

Rhonda stood directly next to the

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LITTLE BROTHER, from page 11

module separated from the shuttle; corrected to match orbits with the station; was jockeyed in towards the hub; and docked with the cargo lock, picking up a gentle spin and mild centrifugal gravity as the connection was made. Lennox emerged into the familiar central passageway of EOS 1 with a great sense of relief.

"Hullo, Padre," the Storekeeper greeted him. "That package you were waiting for finally came."

"What package?"

"The hymnbooks."

"Oh, of course."

"Funny thing, you know, they arrived on the same shuttle that took you down. Isn't that the way? Now, if you don't mind, Padre, I'm afraid I shall have to make a special check of your luggage. Some sort of security directive, I'm afraid."

While Lennox submitted to the search of his kit, the Station Ecologist passed by.

"Morning, Padre. Back from leave? About time you trimmed your window-box, I think."

His kit approved, Lennox slid down the pole to the outer rim of the station, where the gravity approximated one-third G, and entered his private quarters, a bed-sitting-room-office of comfortable proportions, with a room-divider crawling with plants. Station personnel were encouraged to keep a few plants in their rooms, since it simplified atmospheric control. Lennox tended his overgrown vine, which was flourishing in a tray of lunar soil (cheaper to transport than terran) mixed with station compost. The Ecologist had a busy time keeping track of the station's thriving horticulture, but it was worth the great saving in weight which organic recycling netted.

Finishing his gardening, Lennox turned to his desk



note was typed on the same chemical paper used on the station:

"Any place will do,

So long as touching you,
Little Brother."

So—the intrigues of Earth had not been left behind. How had this thing evaded the security checks filtering all his connections with Earth? But of course—it had arrived before the security checks started—and yet not so early that he would have found it before he knew what it was about.

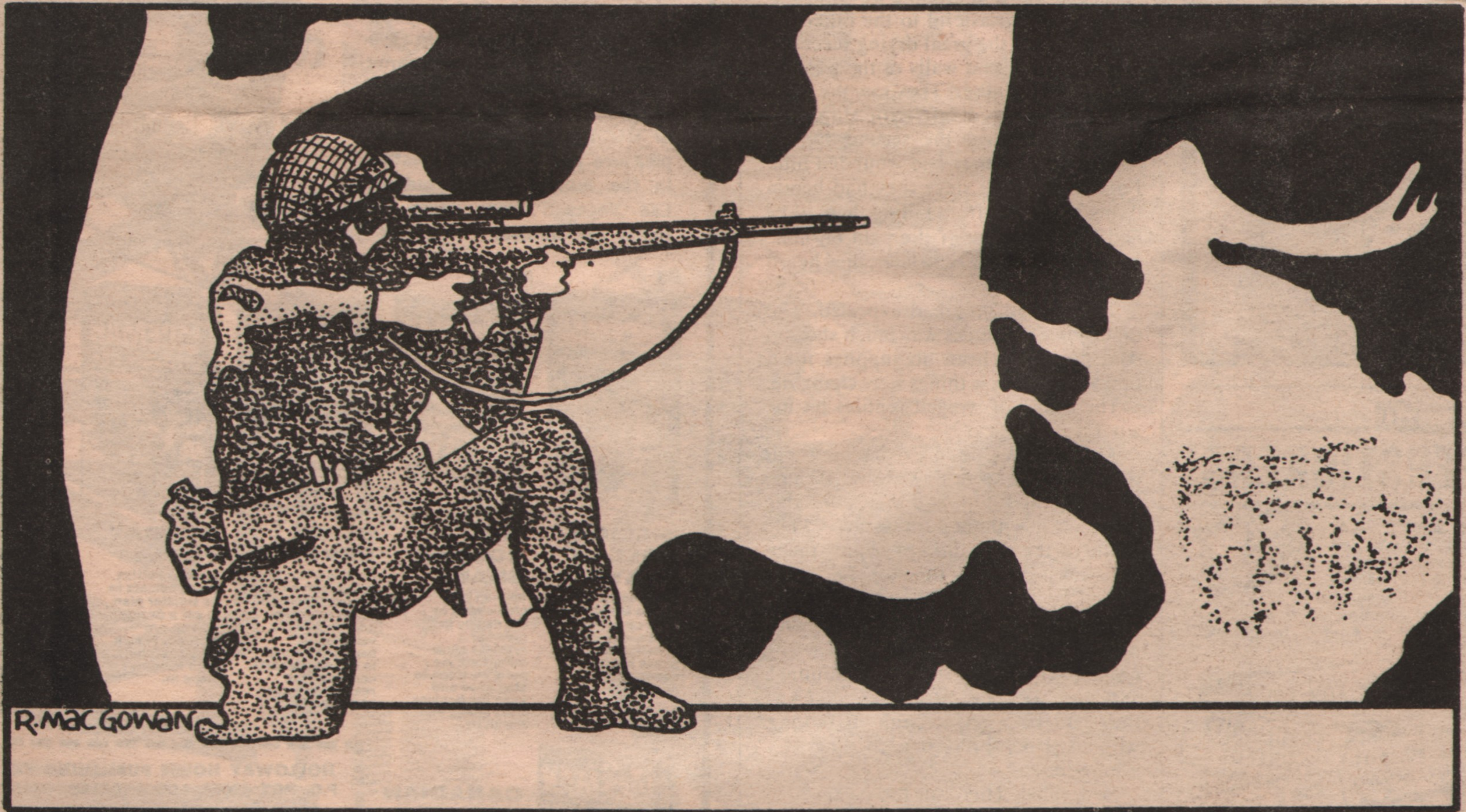
What struck him most was the widespread and efficient organization implied in the simple fact of that deftly timed delivery. Surely there were more than Canadians working for the "alternate America". And the technology in the featureless black box—whatever it was, it was the product of the best in miniaturization.

What was it? A bomb? That seemed unlikely. He had been promised that his assignment was non-destructive. Besides, Anik was one of the best things Canada had going for it in terms of twentieth century survival. What had Jim said?—"In the nature of a propaganda ploy". This little box must somehow carry a message, and the means to make Anik broadcast it to all parts of Canada.

And he, Norman Lennox, was probably the only person in a position to put it in place to do that job.

Over the next few days, Norman rolled the questions around in his head: Did he really want to do it? How would he go about doing it? And how would he evade detection, during and after?

The easiest question was How. Of all the E.A.S.A. personnel in orbit, he was probably the only one who made regular inter-orbital trips by Scooter. Besides calling on isolated research teams in installations like Skylab and Skyview, he also made regular visits to the Russian space platform to minister to the several practicing Orthodox on its staff. Normally, it would not be too difficult for him to leave on a scooter for a few hours, rendezvous with Anik, and return unno-



to examine his mail. There were several routine communications which had arrived during his absence. Generally there was no private mail on the station; messages were received by radio, printed on standard chemical paper, and erased after reading. Lennox skimmed his messages and returned the paper to the appropriate collector for recycling.

Finally he turned to the package of hymnbooks. He unsealed the brown paper wrapping and removed the books. In the middle of the small bundle was something unexpected: a square metal object, about ten centimetres square by two centimetres thick. A

With his brother dead and the cause of Free Canada in his hands, Lennox knew that the time for decision had come, the time to act was now.

ticed.

But now that he was subject to surveillance, it was a different story. Security procedures were not sophisticated in orbit—that was left to Earthside—but it was a simple matter to note times of departure and arrival, and ask you what you had been up to during unaccounted-for intervals.

A cover story would depend on what the interval was. So he visited the station computer terminal and obtained information on an interception orbit with Anik, a general program tape for such an orbit, and a list of launch windows for a twenty-four hour period.

MR. NIMOY MEET MR. SPOCK

interview / STEVE BARNES



"If there's no hope for the present, then science fiction offers hope for the future. And if science fiction offers hope for the future, it's made necessary because the present is so difficult."

He coded the transaction "Unimportant"—to be erased.

EOS 1 was in a two-hour circular orbit, somewhat over a thousand miles from the Earth's surface. Anik was in a twenty-four hour circular orbit some twenty-two thousand miles out, so that its motion around the Earth exactly matched the rotation of the surface, and kept the satellite hovering over one geographical location.

The interception orbit would take around eleven hours for the round trip. The longest trip he usually took was a three-hour ellipse to rendezvous with the Soviet Oasis. There was no way he could explain a ten-hour absence if questioned—provided the ten-hour absence could be proved. His rendezvous orbit with Anik was such that a small power manoeuvre would be required at the apex of his ascent in order to return to EOS 1's orbit when EOS 1 was at that part of the orbit. But the Soviet station Oasis was on the same orbit as EOS 1 on the opposite side of the planet, lagging an hour behind (or an hour ahead, it being a two-hour orbit). A different power manoeuvre at the apogee would rendezvous him with Oasis instead of EOS 1. That would make it very difficult to pin down his movements, since although he had to sign in on the Russian satellite, they were unlikely to cooperate with EASA probing their records—they were touchy that way.

It still seemed somewhat shaky. If he could pick a time to do it when the satellite was in turmoil, when attention was focused elsewhere, he might be able to get away with falsifying his sign-out time. And just such a time was approaching: the launch of the trial run for the Mars ships.

Lennox had become so absorbed with the question of how to reach Anik and how to get away with it, that he had almost decided the question of whether he wanted to do it without facing it directly. The transition from speculation to action was not so easy, however. Although he tended to play devil's advocate when arguing with extremists, he was himself firmly opposed to the American occupation, was angered by it, shared the cultural anger of a small people living for a century in the shadow of a great people, the anger of a little brother trying to grow up. But he did not know precisely what he would be achieving. To give his anger the necessary edge for action, he needed to know the impact of his blow.

Quite frankly, he was scared.

Mail came from home:

"Dear Norman,

"I know what you must be going through, wondering if there isn't some way you can make it all worthwhile—Jim's death I mean. He chose a violent route, perhaps not the wisest route, but one true to his character. I know you think his motives were wrong, that he was really on an ego-trip; but his own personality was the only one God gave him. I suppose I can love him better than you can, because I helped to shape him, for better or for worse.

"I also helped to shape you. You sometimes had a hard time of it, as his "little brother". Your needs are very different from his, but some things you share. Where he was compelled to action, your vocation is to communicate something.

"But what do you want to communicate? I know what I would choose: to remind people of those crucial last moments surrounding the coup, to remind them of the death of Stephen, and of what type of regime we are under. It is sometimes so easy to forget. But I have no way of speaking to people about these things.

"I hope you do not feel that I am putting you under pressure. I know you would resent that. You have been under so many different pressures lately. But I thought you might appreciate some idea of what a person might do.

"Love for now,

"MOTHER."

It was a comforting—no, a strengthening—letter, revealing as it did an underlying strength where he had been blind to it. Somehow it called forth in himself a determination he had been unaware of before. On another level, of course, were the hidden clues, but they seemed to flow easily into the substance of what she was saying; the espionage level did not detract from the motherly level; enhanced it, rather. "... remind people of those crucial last moments ..." So that was the substance of his errand.

He dutifully disposed of the recyclable paper. The next day, he celebrated the Eucharist, with the usual half-dozen present. As he took the wafer on his tongue, he offered his intention to God, and dedicated himself for his mission—not arrogantly, as one who says "God's

Ever since the Starship ENTERPRISE sailed into the outer regions of TV space there has been a growing phenomenon among the young people in our land—a group of admirers which has risen to bestow a kind of immortality on the program *Star Trek* and on one of its heroes, the half-human, half-Vulcan, Mr. Spock.

Whatever curious chemistry was created when Gene Roddenberry cast Leonard Nimoy as the man with the extraordinary ears has not been fully explained even by the fans themselves. Yet the chemistry exists, and the role has lifted Mr. Nimoy into the realm of the celebrity.

What is a bit sad about all this acclaim is that Leonard Nimoy is a personality as fascinating in his own right as Mister Spock ever was. He had a long history of legitimate stage and screen credits prior to *Star Trek*, and although his name was not then the household word it has become, he was known in the trade as an "actor's actor," that succinct term of praise that says it all.

Beneath the pleasant smile and the warm eyes there is something intense, demanding. There are hints of it in everything he says, most of which communicates his strong involvement with life and people. He is not the enigma that Spock was. Instead he is a man clearly committed to living a creative life as fully as possible.

A glimpse at his present schedule gives a clue to the real man behind the tv character; he lives a fast-paced, frenetic life and asserts that he enjoys every minute of it. Somehow he has found the spare time to write and record his own music albums while continuing his acting. He has performed a variety of stage roles ranging from musicals and comedy to the more serious dramas of Robert Shaw's "Man in a Glass Booth" and Remarque's "Full Circle," each time to excellent reviews. He is lecturing at college campuses around the country on science fiction. He has written two books filled with his own inimitable style of poetry and photography, the first of which he described as "the most passionate and personal statement I've ever made." The second, "Will I Think of You?" is just out from Celestial Arts. He spent this winter touring off and on with an auto show promoting, naturally, the *Star Trek* coupe, a feature of this year's show. He also found time to campaign actively for the new governor of Massachusetts.

Yet despite the diversified fields into which he has ventured, Nimoy is the first to admit that Spock still has an influence on his life. In an effort to understand something of the man behind the role, I settled down with him for a revealing talk one afternoon recently.

VERTEX: I understand that you're lecturing now at colleges on science fiction. I'm rather curious as to how this evolved.

NIMOY: Well . . . I can't think of any more natural subject for me on campuses. That's what they want to hear me talk about—my feelings about science, science fiction literature, and present scientific reality. I try to do a composite kind of thing that covers the territory.

VERTEX: Are these actual science fiction courses?

NIMOY: No, no, I don't do courses. I do a lecture that lasts approximately an hour and a half including questions and answers. I come in, do it that evening and leave. I do a series of one night things on a tour and mostly what I talk about is how the science fiction of the past has become the reality of the present.

VERTEX: Do you read a great deal to keep ahead of your subject?

NIMOY: I read on it constantly because I'm trying to keep it a very up-to-date, contemporary experience. I use clippings from newspapers and magazines that I pick up every day. And in many cases I try, if possible, on coming into a city or town to pick up *that* day's newspapers from that city or town and find items that relate to illustrate to my audience just how immediate and contemporary the whole thing is.

VERTEX: Then you're into the "new wave" or speculative fiction aspect of science fiction?

NIMOY: Yeah. Oh, yeah.

VERTEX: Well, what do you consider as science fiction's greatest value, other than that of sheer entertainment?

NIMOY: I tell people—if you want to know what's happened in the past, read the history books, if you want to know what's going to happen to us in the future, read the good science fiction authors. It's all there. All the things that Jules Verne talked about, all the things, unfortunately, that George Orwell talked about. They're all part of our contemporary life today. Plus the fact that I think science fiction makes it possible to present some sociological and philosophical concepts in a form that is more entertaining and more palatable to a lot of people than it would be if it were simply done realistically. Therefore I think that the writers are in a position to get the word out and to educate people to certain ideas and possibilities of the future of mankind without being so frightening that they (readers) get turned off . . . It is a very imaginative form, it's a theatrical form, plus the fact that it's a tremendous vehicle for social comment.

VERTEX: Do you think the young people of today are so responsive to science fiction because it's offering them hope for the future . . . or is it their disillusionment with the present?

NIMOY: I think if one is true then certainly the other is true. The question is a little bit circular. (Grins) If there's no hope for the present, then science fiction offers hope for the future. And if science fiction offers hope for the future it's made necessary because the present is so difficult.

VERTEX: The reason I asked is that many science fiction clubs have 'splinter groups' and one of these groups is the SCA—the Society of Creative Anachronists. These people are living in the *past*. Isn't it all the general disillusionment with our times?

NIMOY: Ummmh, huhhh. There's a lot of disillusionment with our time and I can understand the interest in going back to a time when problems seemed more solvable, more simple, less complex. Perhaps that's one of the reasons we have the nostalgia movement in the entertainment field. In motion pictures and theatre, revivals and nostalgia pieces have been quite the trend for the last couple of years. I think the reasons for looking forward and looking back are essentially the same—it's an unhappiness, and a great deal of tension about what to do with the present. The present is so difficult and complicated.

VERTEX: You've been successful in almost all the creative fields—your acting, your photography, writing and singing your own music, writing poetry—is there any chance at all that you might turn your talents to writing science fiction?

NIMOY: I doubt that. (Hesitates) But then again, one never knows. I used to say I would never write . . . at all. I didn't really think I was equipped or meant to be a writer. I always felt I was talented as an interpreter of words, but not a creator of words. And I suddenly found myself writing because there was something I wanted to say.

VERTEX: That's a familiar feeling—the feeling that there's something you must say.

NIMOY: I'm pleased about that. I try to keep it that way. I try to write only when I have something to say and *not* because I'm supposed to be writing. I'm satisfied with the two books I've published so far in that I feel they're honest and personal. I'm working on a book now which I may or may not give to the publisher, depending on how I feel about it when I'm through. I find myself occasionally writing because I've said to myself, 'you should be writing today' and then I say, 'Hey, wait a minute, that wasn't what this started out to be.' I'm trying—hoping—to write a book about the whole Spock and *Star Trek* experience. That's a big undertaking because there're an awful lot of implications involved, an awful lot of emotional experiences, a lot of cerebral concepts that should be dealt with. If I'm happy with it then I'll give it to the publisher. After that, I don't know. I might suddenly have something to say that might best be said in the science fiction form. I might then find myself writing science fiction.

VERTEX: There have been rumors that a *Star Trek* movie will be made. Do you have any information on this?

NIMOY: I feel very ambivalent about all of the conversation concerning the renewal, revival of *Star Trek* or about the possibility of *Star Trek* in other forms. I'm not ambivalent about doing it . . . at all. There's no question in my mind that if all the elements are there—the cast, and the proper script, production, direction—I'll be there . . . Happily. But I'm a little concerned that there's a tremendous amount of anticipation being built up, and possibly, a lot of hopes and dreams to be shattered. And I don't like to participate in that . . . frankly. I hope it all works out and I think it's wonderful to hope for something, but it's become such a constant, on-going thing, these rumors that flash across the country, literally, that I'm concerned about the intensity of it. This conversation about the renewal of *Star Trek* has been going on for a long, long time.

VERTEX: Well if such a project should come to pass, do you have any concrete evidence that the original cast will be used?

NIMOY: Now . . . I can only tell you this . . . that about seven months ago, or perhaps a little less, Gene Roddenberry called me and asked me to lunch and we had a long, exploratory conversation about the possibility of my involvement in future *Star Trek* work at some time . . . motion picture, or whatever . . . And I told him what I just told you. He asked my opinion about what should be done about the cast. I said . . . very definitively . . . that I felt it would be a *terrible* mistake to change the cast. I think part of the success, a major part of the success of *Star Trek*, is the fact that that cast functioned as a family and the chemistry was right. The audience related to that cast as a family. To change the family would be, in effect, to do something other than *Star Trek*. *Star Trek* is that family of people, among other things. It's a lot of things, but it is that, too, and in a major sense. So I feel strongly that it should be the original cast. Now recently I get letters and phone calls from people, telling me that Gene Roddenberry has said that it's all settled, the original cast will be intact, and that there are negotiations under way and so forth. The last time I spoke to him was about six or seven weeks ago and he said to me, "My agents inform me we should be able to announce a deal within a few days." That was several weeks ago. A few weeks ago I talked to someone in New York who had had a conversation with Gene Roddenberry just the previous day, who had been told by Gene that he expects to be able to make a public announcement within a week. Now this seems to happen every several weeks, and while I understand what Gene's going through, I understand the difficulties, I just wish that we wouldn't be sending up smoke signals that say, 'Here it comes, here it comes, here it comes.'

VERTEX: You mean either say 'yes' or 'no' or quit.

NIMOY: Or just . . . be quiet for awhile. I'd like to see the thing relax a little bit, because of the tension among so many people. And what seems to happen is that people, in their minds, have already got the movie made. The movie's produced, that's finished, and we're just waiting for it to come to the theatres, and obviously once the movie's done, why we'll do *Star Trek* for television again. People

turn to page 47

on our side", but austerely, recognizing the finite nature of his human goals.

Then, with one further consultation with the computer, he made his preparations.

VI

Hullo, Padre. On your way out?"

"Yes, I'm going over to Oasis to celebrate the liturgy."

"You'll miss all the excitement! I'm running round like a chicken with its head cut off, with all the last minute checks for the trial run!"

"Oh, if I know the Russians, they'll be tuned in and watching. I'll get as good a view from there by TV as I would from here through a window."

"True 'nuff! Well, excuse me, got to rush!"

Lennox, his heart pounding, signed his name in the book, and added ten hours to the departure time. She hadn't even remembered to offer him the book! He stepped into the personnel airlock and activated the exit sequence.

A minute later, he was standing on the outside of EOS 1. He had picked a time when they would be in the Earth's shadow. The planet loomed in the sky, a vague brownish shadow pressing the eyeballs, blotting out the stark black of space. The dim shape of the station was outlined with escaping light from windows.

With practiced ease, Lennox swung up to the docking platform where orbital equipment was secured, and selected his scooter. The grid-like platform rotated in a contrary direction to the station, to cancel out the spin. This facilitated docking.

Lennox unclamped his scooter, pushed off, and swung into the saddle. From a pouch on his suit he drew forth a tape cassette with his flight program in it, and slapped it into the automatic pilot of the scooter. The scooters usually ran completely automated between orbits, ferrying minor supplies. An open lattice of struts supported engine, fuel, oxygen, gyro for attitude control, and the two concessions to the possibility of human occupancy: a saddle and an auxiliary life-support system.

On the miniature computer console by which he communicated with the automatic pilot, Lennox typed:

"T=06:13:05.0"

The console's small screen replied:

"T-00:09:43.4"

and began counting the seconds, at the same time tilting the scooter's fuselage, such as it was, to aim its thrust in the proper direction.

When the ignition came, the acceleration was harder than usual. Lennox had obtained four of the chemical boosters used to jockey cargo modules into position, and coupled them to the scooter's frame, calculating their added thrust into the taped flight-plan. He would use four more to break the ellipse at the other end, thus considerably conserving the fuel supply of the scooter itself. Even with the boost, the engine burned considerably longer than normal. He hoped no one was watching, if they were, they probably would not recognize what was going on.

Slowly the huge shadow of Earth shrank in size, the intense Sun emerged from eclipse, and a crescent of blue sea and white clouds started to form around one edge of the planet. Norman never tired of the sight. His only complaint was that in the closed environment of a space station, he did not see that sight enough. When he did see it, it was always rotating with the station's gravitational spin.

Sun, crescent Earth, three-quarters Moon, defined the space within which he hung, seemingly motionless, the only gauge of his motion the Earth's shrinking diameter and turning face. He listened to the talk on the radio, full of count-downs for the Martian trial run. When Earth presented a half-face, he knew he was half-way to Anik, although the rest of the descent would be traversed more slowly than the first half had been, as the scooter lost speed at the top of its orbit.

The buzz of radio voices faded into the voices of his own thoughts:

"It is a good thing for brothers to dwell together in unity . . . If you have something against your brother, go and be reconciled to him . . ."

Those deep and ancient human concerns seemed very remote from this bizarre mission; but now, in the grip of elemental laws of motion more ancient than mankind, he floated unalterably towards his rendezvous.

Now the Earth was showing him its full face, many

times smaller across than when he had started, but still much bigger than Sun or Moon. The computer screen blinked on:

COURSE CORRECTION

T-00:10:00.0

Somewhere ahead of him, Anik should be coming into view, unless his orbit had been miscalculated. He unpacked a long nylon rope from the locker and clipped its reel to his belt. From the same locker he produced a reaction pistol, which fired measured bursts of gas and was useful for manoeuvring when there was nothing to hold on to.

A bright star shone directly ahead of him, moving slowly against the star-field. Without hesitation, Lennox released his safety-harness and drifted free of his scooter. Aiming the reaction pistol carefully, he fired five charges behind him, and moved away from the scooter, his nylon cord unreeling rapidly behind him. The scooter's screen read:

T-00:02:13.5

The bright object ahead of him resolved itself into a shape, a large, squat cylinder, covered with photoelectric cells, its antenna a golden cobweb spread out at one end like a lop-sided halo. There was no doubt that it was Anik. Designed for a life-time of one decade, it had lasted nearly double that, and together with its twin back-up system, Anik-2, had become the pivot of Canadian telecommunications. The country would not hold together for a day without the multiple channels of information and mass-media that passed through the oddly eccentric dish antenna, casting an elliptical net of communications over the northern half of the continent.

Lennox continued his rapid approach until he was a few yards away. Then he fired five charges from his gas-pistol directly towards Anik, and came to a dead halt. The barrel-shaped body of the satellite was somewhat higher than a man, and fat in diameter; the antenna perched at one end, looking like an open oyster-shell of gold mesh. Lennox floated beside it, feeling dwarfed, and following with his eyes the direction of the antenna. There below him, partly veiled in cloud, Anik always faced the part of the world where he was born. Anik his brother, selflessly passing on the messages of others.

Norman was aware of his scooter, slowly catching up with him. In another minute, it would fire a burst on its rocket to alter its descent trajectory slightly, so as to rendezvous with Oazis instead of EOS 1. Working according to his carefully rehearsed plan, he removed from his suit's pouch-like pocket the small metal box; pushed a switch set in its side over to the ON position; peeled off a square of paper backing to expose an adhesive surface on one side; carefully aimed that side at Anik; gently pushed the box forward away from his chest; and watched it float effortlessly across the intervening yards and stick to the side of the satellite. It was not his own message he was passing on; like Anik, he was merely a relay system.

The scooter engine fired. The slack on his nylon lifeline rapidly ran out. He let it pass through his hands, slowly receiving the extra momentum the scooter was acquiring, then hauling himself in with a couple of tugs on the rope, winding it back on the reel, gripping the frame of the scooter with his hands and doing a slow cartwheel into the saddle. He hoped the second leg of his orbit would prove to be as accurately aimed as the first.

The little black box spoke to Anik-1. Anik-1 spoke to its back-up system, Anik-2. An overriding word of command was given. One channel from each of the twin satellites was locked into a continuous conversation with its neighbour. Command of the system had passed to the tapes looping upon themselves in the little metal box.

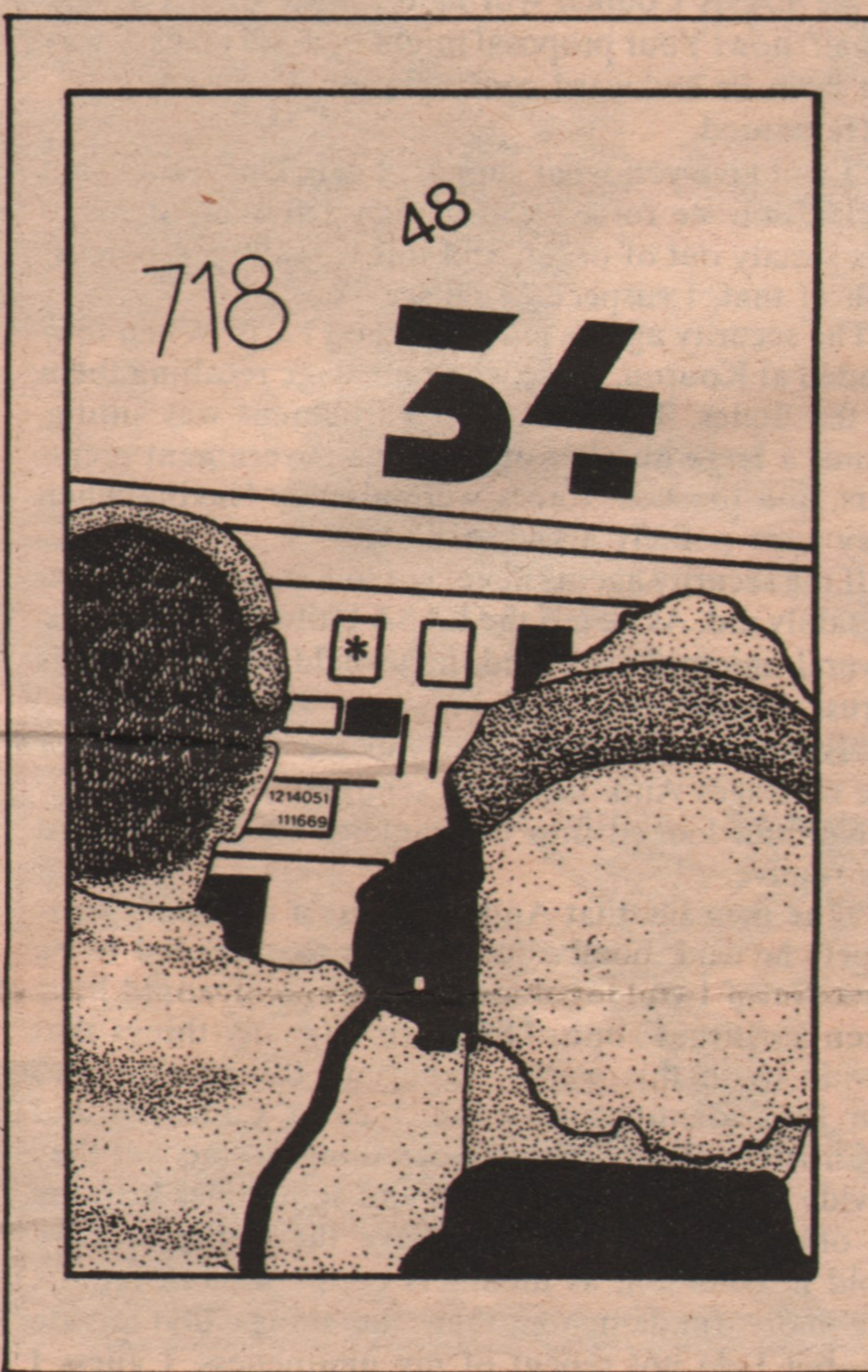
Lennox saw himself hurtling through space like a piece of driftwood caught in a current. He was at the mercy of forces infinitely greater than himself—the forces that drove planets round suns and spun galaxies upon themselves and dragged the tides across the Earth and made the material of his body stick together. Like Anik, he had been merely the relay for someone else's message. A cog in someone else's machine. He suddenly saw himself the passive instrument of a grand and complicated design, put together by scores of clever minds, pivoting on the ability of those who knew him best to manipulate him into cooperation. He felt used. Anger welled up inside him. He had been used, a precision component in an artfully master-minded operation, exploited for what he was instead of valued for who he was. Even that letter from his Mother—was that not the most artful piece of manipulation in the whole pattern? He felt betrayed.

Impotently grieving for his own lack of assertion, he fell deeper into the gravity-well of Earth. The planet slowly swelled in size, at the same time passing more of its face into the darkness of night.

Is it such a bad thing to be used? To be used is to be of service. The motion of the planets is not a machine—it is a dance. In his mind flashed a scene in the north woods, white water foaming over rocks, a canoe riding the rough water. The secret is to ride with the currents and eddies, to let them carry you with the gentlest of guidance. So he was riding the gravity-well.

“... O ye works of the Lord, praise ye the Lord! Brother Sun and Sister Moon and the hosts of stars, praise the Lord! Mother Earth, brother cloud and sister sea, blue-white globe, praise ye the Lord! Rocket fire and free-falling satellites, praise ye the Lord!”

And underneath his elation, his awareness of things greater than himself, and himself as a vehicle for the celestial dance, there was kindled a resolve: the Little Brothers of St. Francis had their own message to deliver, and if he took risks to serve another's message, he would dare to deliver his own message too.



The dead voice from the past called the people together, reminding them that Canada had once been free, and demanding that the people rise and drive the hated invader from their lands.

VII

Lennox docked successfully with the Soviet space station, and let himself in through the personnel airlock, which was familiar to him. He was met by a cosmonaut as soon as he entered, and greeted jovially but officially. After the necessary forms were filled out, he was ushered into the living quarters, where most of the station staff were collecting to watch the trial run of the EASA Mars ships. Today was merely the enshippment; Lennox had wished the crew well shortly before slipping away; but interest was already building towards tomorrow, when the flimsy-looking vehicles would move out of the parking orbit for the dry run. There was still the better part of a year before the launch date, so that any problems could be ironed out.

“Our own expedition is steadily preparing,” one of his Orthodox parishioners informed him. “We plan to use the same launch ‘window’, as you call it.”

Down on Earth, others were watching the EASA crew board their future homes. In Canada, families gathered for the time-honoured ritual of watching the

eleven o'clock news. The Mars Tests were sufficient to encourage even the sports fans to switch on promptly at eleven. The news progressed through its normal pattern: happenings and disasters; reporters interviewing each other as to why their predictions of last week had failed to materialize; and the Human Interest Story. Then there was a slight flicker, and the face of the announcer was replaced by another, familiar, face—one they had not seen for over a year:

“People of Canada,” he addressed them, as he always had. “You have just heard the so-called Prime Minister announce a state of martial law, and tell you that he has called on the Armed Forces of the United States of America to help prevent a Communist coup.”

It was *that* speech! His last appearance. They twiddled the dial. It was coming in on every channel! How on Earth had the guerrillas done that?

“This is a patently ridiculous story which I hope none of you are gullible enough to swallow. It is in fact the so-called Government that is undermining our Parliament, by ruling through Order-in-Council and denying the largest party the opportunity to form an administration. Now they have thrown all constitutional forms out, and have invited foreign soldiers to help them hold down the righteous anger of an indignant people. There is going to be no Communist take-over—there is going to be a fascist take-over. This is probably the last time I shall be allowed to speak to you.

“I want you to remember that it is not the American people who are doing this, although many of them will support it, just as some of our own countrymen will. Given time, I believe that great nation will realize what an unhappy choice it has made by responding to this illegal invitation. Let us not take it out in violence on their soldiers—but let us not lie down and take it, either! A people that is truly free cannot be enslaved. Resist, obstruct, annoy, sabotage. Play dumb. Fraternize. Undermine. Do not give in. Do not forget.”

A nation is reliving its dying moments, as it watches in horror the re-enactment: Once again their ears hear the sudden crack, their eyes see the splintered mortal bone and blood, the surprised look as he topples forward, a hole blown in his head by the assassin's bullet.

And they are remembering and remembering and remembering.

They were going outside and whispering to their neighbours across the lawn. Some of their neighbours had a Plan.

And desperately technicians are trying to trace the malfunction, and officials of the illegal government and the occupying power are nervously assessing the impact. The brief broadcast is over; will it repeat itself? Should they cancel all television use of Anik? But now the whole communications system is based on the satellite; the country would fall apart if Anik were put out of commission.

Meanwhile, the questions remain: How was it done? Who was responsible?

The following morning, Lennox shared the Eucharist with three Orthodox.

That evening, everyone gathered to watch the National News with a double motive: to watch as the EASA ships started their gradual climb out of orbit on the trial run to the other side of the Moon; and to see if Anik would repeat its “malfunction”.

It did.

While the people talked, the waning powers—that-were tried to silence Anik. But Anik, in conversation with itself, overrode all negative commands, and continued to function fully on all channels. To stop sending positive signals to Anik was pointless; that clearly would not stop Anik's own broadcast when the eleventh hour arrived again. There was one simple armour against the broadcast: a general power-cut right across Canada at ten minutes past eleven.

And in the sudden silence, people remembered.

And the following morning, there began the General Strike.

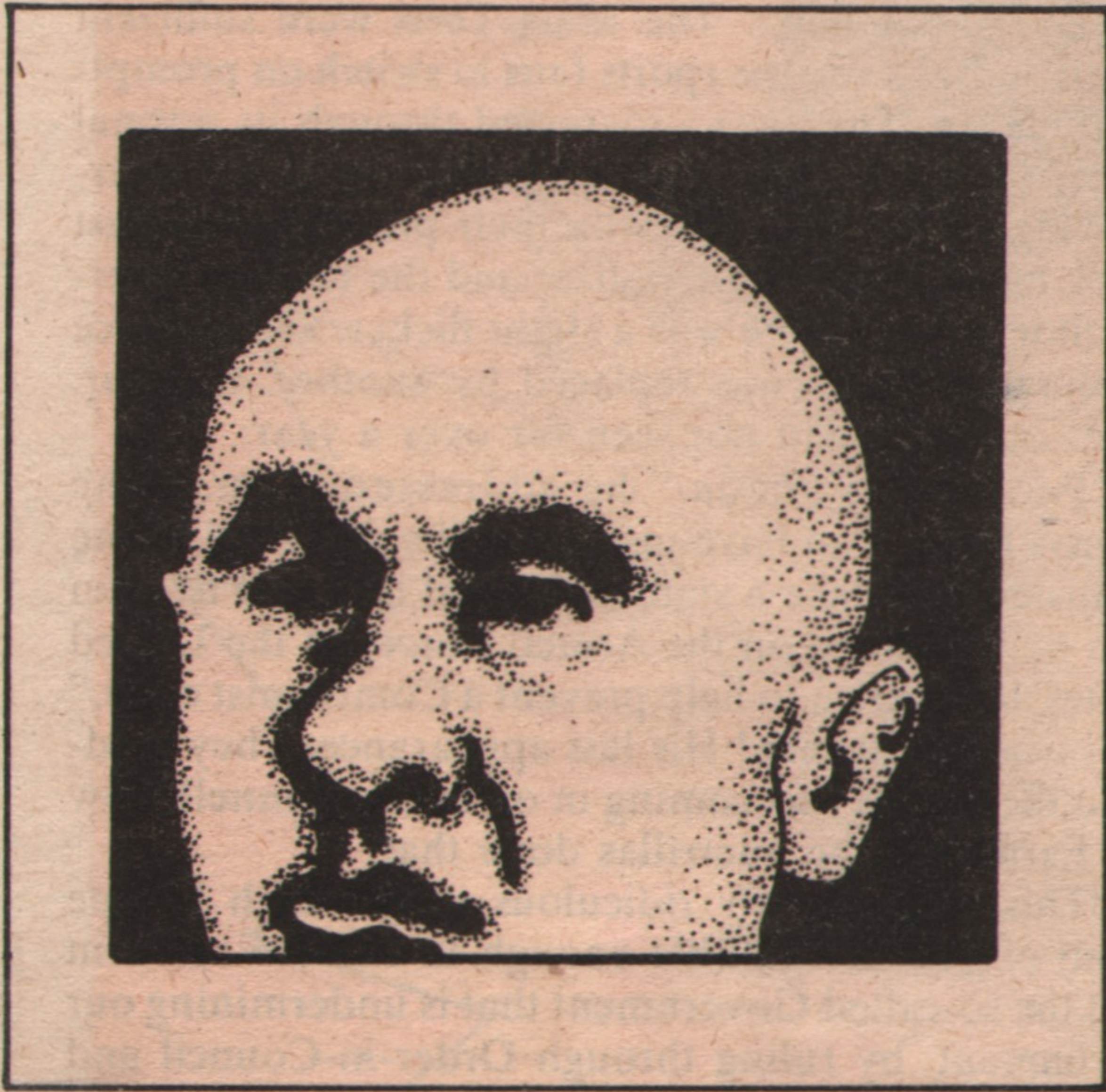
The security forces were coming to some logical conclusions about the origins of the trouble. They reopened file 34. When Lennox arrived back at EOS 1 he was ordered to see the Administrator immediately.

“You are to return to Earth, *mon père*,” said LeMieux peremptorily. “It seems you have misused your security clearance in the orbitosphere.”

“That certainly cannot be proved,” replied Lennox.

“With modern interrogation procedures, it can,” responded LeMieux. “I pity you,” he sighed.

“Then perhaps you can do something to help me.” Lennox challenged the Administrator. “Can you put



me on a shuttle that lands at Kourou instead of Kennedy?"

LeMieux raised his eyebrows and pursed his lips. He felt guilty about his intermediary position. Lennox had placed him in a touchy position with his superiors—but they had started it in the first place.

"Why not?" he shrugged. "There is a Kourou shuttle due to dock in about an hour. If you hurry, we can simply say we sent you down on the first shuttle available."

The next morning, as Lennox was climbing out of a cargo module onto the tarmac in Kourou, French Guiana, the Canadian Forces joined the General Strike; and a large number of the U.S. forces (who, after all, had lots of Canadian friends by now) reported sick. As the security agents at Kennedy got word that Lennox was in Kourou, he was boarding the regular flight from Kourou to Paris, en route for the Brussels offices of EASA; and the former Canadian Prime Minister, the one who invited the U.S. Marines to help him remain Canadian Prime Minister, saw the writing on the wall, and sought asylum in the U.S.A. His running out pulled the rug out from under the occupation force.

The third morning of the General Strike, the Canadian Forces thought of something better to do than strike. In orderly fashion, they converged on Ottawa, and their senior officers appeared before the Governor General. Shortly afterwards, the more prominent socialist M.P.'s were summoned to Government House from house arrest, and at noon one of them appeared on national TV (via Anik, of course) to announce that the Governor General had called on him to form a new Government. As his first action, he was removing all M.P.'s from house arrest, and summoning Parliament for an emergency session forthwith. Nearly two years after its election, the Thirty-Sixth Parliament assembled.

Norman Lennox reported to the Brussels office of EASA as the security agents arrived in Kourou. He was soon standing on the carpet in the office of the European Co-Chairman.

"Well, Chaplain, what have you got to say for yourself?"

"I gather there are some charges against me?"

"In fact, no. No one has charged you with anything."

"I am to be more subtly dealt with, then?"

"Are you admitting to some default?"

"Certainly not."

"Then what are you afraid of?"

"I have been led to believe that American agents may try to extort false information out of me with the use of drugs."

"The Americans feel you are a security risk. But no illegal act has actually been alleged against you."

"I believe I have been accused of tampering with the communications satellite, Anik."

"That has been suggested. But Anik is Canadian property, and the Government of Canada has made no complaint. Considering the changing political scene, I doubt if they will! However, the Americans still consider you *persona non grata*. There is no due process to deal with that. If a participating state in EASA objects to a staff member from another member, that person is no longer cleared with EASA security."

Norman stood in silence. He had begun by making a difficult choice in order to remain in his orbital parish. Now he had jeopardized that. And the fact that he had carefully covered his trail was irrelevant. Unless he could strike some sort of bargain.

"I do not admit to any improper action," he said, "but I admit to the capacity of visiting the satellite Anik. Would it help my cause if I offered to pilot a telecommunications expert out to Anik, to repair its malfunction?"

"I doubt it. As I said, Anik as such is a Canadian affair. But the Americans still don't want you in the orbital sphere. There are a lot of vital military installations in orbit, after all, and we daren't risk giving access to those to someone who is deemed 'unreliable' by one of our member states."

"If it's the orbital sphere they're worried about, I have a solution. Now that we have one firmly established lunar base, and two other installations in the beginning stages, it seems to me we will need the same social services on the Moon that we have admitted to in the orbitosphere. I would like to volunteer to become Chaplain to the Moon."

The European Co-Chairman stared at him.

"You never know!" he laughed. "Why don't you wait around a few days, and see how the Canadian situation develops? I dare say the Canadian member of the EASA Council will fight a little dirty on your behalf, now. Your proposal might provide an easy way out from an awkward confrontation."

He paused.

"I will give you what support I can, Chaplain. That declaration we forced you to sign a few months ago was strictly out of order, and this is really a repercussion of that, I suspect. We'll see."

The security agents never reached Paris. When they landed at Kourou, there was a message recalling them to the States. The Canadian Parliament was sitting, minus a large number of previous government members, and the U.S. forces were already leaving when they were politely asked to do so.

If the security agents never got to Lennox, the media certainly did. As he left the EASA building in Brussels, several microphones and hand-held video-cameras thrust themselves at him.

"Is it true, Chaplain, that you are responsible for the messages Anik has been sending?"

Norman looked into the camera. He remembered his resolve.

"The message that Anik sent was a necessary message," he said quietly, "a message that needed to be sent. But if I were choosing a message, it would have been a different one. There are so many things that divide us in this world—important things, that give our lives identity and value. I am a Canadian and a Christian. Those are precious things to me, yet they divide me from my brothers, and sometimes lead me to offend my brothers. I believe the things that we hold in common, as members of the human family, are more fundamental than the things that divide us—but I do not repent of my uniqueness. I guess I am asking to be forgiven for being who I am—and offering forgiveness to you for being who you are. I hope my country and the United States will be able to settle their differences amicably. Brothers always argue, but they stay brothers. It is a good thing for brothers to dwell together in unity."

VIII

As it turned out, the United States Government was just as glad to have a face-saving way out of a confrontation over Lennox. The new Canadian administration was quite prepared to fight dirty to protect the unadmitted saboteur of Anik; two member-states of EASA can play the *persona non grata* game, and the Canadians were in an unusually intransigent mood. The following year was an election year in the States, and the more quickly and quietly the White House could dispose of the Canadian fiasco, the better. There were plenty of American politicians, for fair reasons or foul, prepared to make something out of it. It was agreed that Lennox would remain part of EASA's orbital staff, on a probationary basis, on the understanding he would be posted to the Moon.

Before departing for his lunar assignment, he spent another leave on Earth, this time staying with his parents. His Father was on top of the world, quoting socialist slogans and making sly references to the Anik broadcasts. His Mother was quietly knowing. One evening, after Dad had dozed off following the Anik transmission, they sat talking late into the night. Nothing was changed, and everything was changed.

The Mars ships returned to Earth orbit after their trial run, and the final months of preparation for that voyage began.

Telesat Canada accepted Lennox' offer to help re-

store normal function to Anik. No one except Norman's Father wanted to watch that dying speech every night, and sooner or later it would clash with the Stanley Cup play-offs. At Kennedy, he met the senior Telesat engineer whom he was to ferry to the site, one of the original technicians to work on the satellite before its launch two decades previously. They met in the cargo module of the shuttle.

"Don't I know you from somewhere?" laughed Lennox.

"I believe we bumped into each other just outside your hotel a few weeks ago," winked the distinguished looking gentleman who had handed Norman the Canada Club card from his brother. "I shall enjoy seeing Anik again after all these years," he smiled. "With any luck, I should be able to correct the malfunction without opening up its innards, eh?"

"I certainly hope so," nodded Lennox knowingly. "Do you suppose the security boys will ever find out how it all happened?" They laughed.

Two days later, they hung a couple of feet away from Anik. Instead of using a scooter, they had decided to use a lunar-type shuttle. With its greater fuel capacity, they could afford to match orbits instead of making a quick by-pass, and work at leisure.

"Why, there seems to be a small metal object attached to the outer skin," quipped the engineer, reaching out and unsticking the device. "I'll bet this little feller is the one that's been causing all the trouble, eh?" He stashed it in the baggy pocket of his suit. "We'll hang on to this; I imagine they'll want to play it every Dominion Day."

They returned to the personnel chamber of the lunar shuttle and awaited the right moment to break their orbit into a return ellipse to EOS 1.

"There's quite a story behind this little black box," mused the Telesat engineer. "The salvaging of the video-tape itself was the first stroke of luck. Not luck, really; foresight. A CBC technician who was on duty that night realized how precious it was, and how quickly it would vanish once the occupation was complete. He took it home that very night and re-recorded it on his own videocorder, and returned the original to the video-tape library. As he had expected, it soon disappeared from there. This tape is a copy of his original copy, which he has safely hidden away somewhere."

"He got in touch with a friend in the Committee for an Independent Canada, and told him he'd like to show him some interesting home movies. He couldn't say more, because all the Committee members were already bugged by then. Through several stages of grapevine, they got to me. I knew Anik inside out, so it was no great problem to design this short-range battery-operated broadcaster with the appropriate codes to override ground control and take over all TV channels for its little program once every twenty-four hours."

"We knew it would have impact; we never guessed it would topple the whole occupation so rapidly. I guess it was ready to topple."

"It's too bad you're going to the Moon, you know. Unofficially, everyone knows the role you played in this. That and your brother's memory would ensure you a great start in politics."

"No thanks," smiled Lennox. "I'm where I want to be—parish work." ○



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Norman Lennox (sign here)
So help me God.

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MR. NIMOY

from page 44

today (gestures to include outside) are saying, "Are you going back into production on the series?" And I say, "We've no plans for the series, there's a possibility of a movie," and they reply, "Oh, yes, we know about the movie, but won't you do the series, after?" It's as though the movie is a *fait accompli* and now we must deal with the question of the series. Well, we don't have a movie. We don't have a script, we don't have a cast, we don't have a starting date. We don't have the money, we don't have a writer, we don't have a director. We don't have anything. I mean we are in essentially the same position today with this whole movie and renewal of *Star Trek* series idea as we were a year or two ago...

Conversation is taking place. That's all. And I hate to be the wet blanket, but I just hope it works out. You know.

VERTEX: I think you've a realistic attitude. I think it's a fair one.

NIMOY: I just hate to see people with their eyes glistening as though they're ready to buy their ticket for the movie and turn on the TV set and here it comes.

VERTEX: Well, do you think there could be another successful science fiction series, and why do you think there hasn't been one since *Star Trek*?

NIMOY: There's no doubt in my mind that there could be another successful series.

VERTEX: Well, the last couple of years has seen one or two that really bombed.

NIMOY: There've been some disasters...

I know, there've been some disasters. But that doesn't necessarily mean that it's impossible to make one. If we made, with *Star Trek*, a successful series and I think we did, then obviously it is a proven fact that it can be done. And I think there are a lot of people in the industry capable of doing it. But... I don't believe the networks, at this time, are really convinced that it is something they necessarily want. Their feeling has been in the past, and I've heard this from many major executives in the industry, that the intensity of interest in a show like *Star Trek* is overwhelming but that the depth and breadth of it is not enough to warrant the kind of money and commitment that they must make to put a series on prime time television.

VERTEX: Then you're saying they're not convinced they'll have a mass audience.

NIMOY: They don't believe, yet, that there is a mass audience. I think they're wrong. I happen to think they're wrong. But their frame of reference is limited to certain specific approaches in terms of making their decisions, and I think the current interest in *Star Trek* and the current tremendous success of *Star Trek* in syndication reruns is an indication that if a good show were put on at the right time, it could run successfully. But... they didn't do that for *Star Trek*. They just lost faith in the show. When they put it on Friday night at ten o'clock, that was disaster.

VERTEX: Before we wind this up I'd like to ask you, is there any project or role, any life-long ambition, that you'd like to do, and haven't yet?

NIMOY: Well, yes, there are several. I don't know when or if I'll ever get to them, but I'd like to play Hamlet before it's too late. And I'd like to play Cyrano de Bergerac one of these days. Fortunately, or unfortunately, my life is so filled with activity that it is very difficult to set aside time for a project like that. And it would be a very time consuming project for me. The last couple of years it's become even more complicated because I've added the writing to my schedule and I've added the lecturing to

my schedule and I'm still doing a lot of theatre work. I'm still doing an occasional television show so I'm really fragmented at this point. And I'd like to do some more directing.

VERTEX: I know you did one *Night Gallery*.

NIMOY: Yes, I did a *Night Gallery* at Universal, while I was there, had a great time doing it, and was offered another. But it conflicted with an acting job I was doing... so...

VERTEX: What's ahead for you in the immediate future?

NIMOY: Well, I'll be doing an auto show in Detroit, then I start with some lecture dates. I have a tentative theatre date for Austin, Texas. It's a play called *Journey to the Day*. And I hope it works

out. I always have to say 'I hope' on these things, because one never knows what might come along. You draw contracts with these people in good faith but there is always an 'out' clause designed to let me escape in case something major in the way of a movie or TV show comes along.

VERTEX: It sounds like a tremendously busy schedule to me.

NIMOY: Well, you know, I'm trying to be a lot of different things at the same time and it's difficult. I'm having fun because I love change. (Pauses and grins) I love the challenge of change.

VERTEX: I want to thank you for your time and courtesy—it's been appreciated.

NIMOY: You're very welcome.

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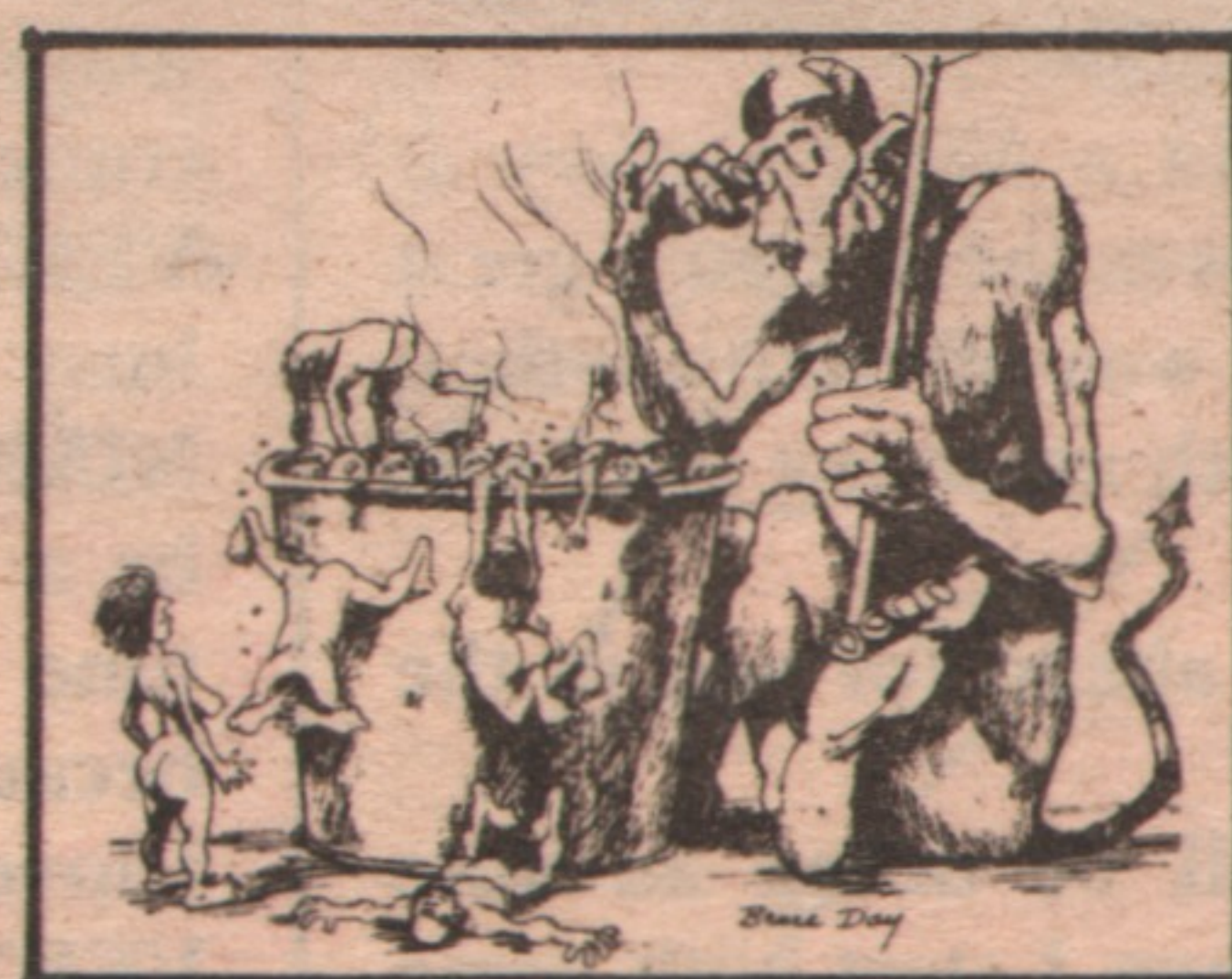
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