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Mushroom World
by STEPHEN TALL

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Stephen Tall's last story here about the exploration ship *Stardust* ("The Bear With the Knot On His Tail," May 1971) was a great favorite, and we're pleased to offer this brand new *Stardust* adventure.

Mushroom World

by STEPHEN TALL

"They were right," Pegleg Williams said.

We had been sitting, watching and listening, for at least half an hour, and during that time neither of us had said a word.

"I'm glad," I said. "To be right is always commendable. But I refuse to ask who 'they' were, and what they were right about."

Pegleg's narrow face relaxed slightly, and he grinned his sour grin.

"I forget," he said. "You don't read minds, do you?"

"In the circles I move in, it's probably a blessing."

I shifted my gaze back to the unlikely view before us. In landings on more than thirty worlds with life complexes, we still hadn't seen anything quite like it. Yet it wasn't unfamiliar. In fact, as I look back on any of the worlds we've recorded, only the details were strange. On the most uncanny of them, we *recognized* things. Life was life, ecology was ecology, interdependence and interaction followed the same rules.

Pegleg's mind seemed to be in a similar groove.

"I was thinking," he explained.

"Always a good sign," I said.

"No wonder you have no friends." He refused to be diverted. "Look, Roscoe, you remember Stansbury's hypothesis on the uniform nature of basic life. He contended that life can exist in only one chemical pattern; the pattern we know. That the components of living systems can only be carbon-centered complexes. And Burns and Wang, after extensive attempts to stabilize other energy-holding combinations and to make them self-replicating, agreed with him."

Pegleg fitted himself more comfortably onto the rocky uplift where we sat, shifted his plastic

knee the way he always does when he's grappling with an idea.

Below our perch a vast marsh stretched away, and the stench of it came up to us on puffs of the hot erratic winds. Some of the samples were pretty rank, each breeze had its own flavor, but they all added up to a varied, stinking wetland that I would have recognized blindfolded. I sniffed with satisfaction.

"You realize," I said, "that with a few strokes of the tongue you have just eliminated all the intriguing hypothetical life forms made of stone or metals or mixed vapors. I'm gonna miss them. No iron men, sipping their afternoon mercury pick-me-ups and topping them off with light snakes of bismuth or antimony. No conglomerate gaseous living miasmata, blanketing whole continents. Seems a shame. All that good imagination gone to waste."

"Sorry," Pegleg said, "but I'm afraid that's the way it is. I have spoken."

"You have that," I agreed. "Often and much. This time, though, I guess you make sense. We've never found any life that broke the rules. We've never found any metabolic systems not geared to the energy of a planet's primary. Look at that." I waved an arm. "What does that remind you of?"

Pegleg grinned.

"That's easy. A Charles Knight painting of the Middle Mesozoic on Planet Earth, Sol III. Critters a little different, but not conspicuously so. Plants almost uncannily familiar. The ghost of old Charley would be plumb smug if he could see this."

There were sounds, too, primitive sounds, rumblings, grunts, and occasionally a rasping roar as two big saurians, dripping mud and vegetation, lunged at each other in passing. Like everything else in the landscape, the noises fitted.

Then came something that didn't. It fluted across the miles of marshes, a high pealing call, infinitely more refined than the rumblings and splashings of the ponderous beings below us. It had a purity of tone, a clear haunting sweetness unlike any sound I had ever heard. It came from a distance, yet we heard it clearly.

"Charley didn't paint in any noises," I said, "and if he had, that wouldn't have been among them. That didn't come from the marsh."

We sat and listened. Back across the mesalike plateau behind us we could hear human voices, the distant murmur of conversation, an occasional laugh. Small parties from the *Stardust* were out and about, stretching their legs, adjusting, orienting, just as we were.

When I had about given it up as a one-time thing, something imagined, the distant call came again.

I focused my binoculars on the dark line far across the marsh. In making this landing the *Stardust* had swept in low over the country behind that line, and I knew that it was forest, dense forest, probably flooded at least at the edges as marsh merged into swamp. I zoomed in on the treeline.

The trees were enormous. From the shadows cast in the midmorning sun, and by comparison with the bulk of the big reptiles that wallowed and sprawled in the muck of the marshes, I guessed three, four hundred feet as a good height for most of them. Their great broad leaves confirmed what we already knew, temperatures on this part of the planet never got very low.

"Good timber," I remarked. "It would take Paul Bunyan to get it out, though."

"Who'd want it?" Pegleg asked. "Industry and the building trades seem a little scarce hereabouts. Nope, I'll speculate that that wood lot is safe from exploitation for some time to come."

The sweet high call fluted once more, seeming to come from the forest edge, and an answer echoed faintly from deep in that mighty jungle.

"What meets the eye isn't all there is," I said. "That proves it. Those big bohunkuses down there is the muck don't know we exist, but those calls are about us. We've attracted attention."

"Reasonable," Pegleg nodded. "When we get the okay to go out, I imagine that's where you'll be."

"I don't like jungles," I admitted frankly, "but I don't like mysteries, either. I'll probably look into it."

Pegleg sighed.

"The things you get me into! But Lindy's too young to be a widow, and checking over that patch of trees will be more than a one-man job. Okay, I guess I can spare a few days. What comes first?"

That's usually the way we start. It sounds casual, even random, but it isn't. After thirty landings on thirty life-dominated worlds, we know what we're doing. Naturally, we haven't solved all the problems. Each planet has given us new ones, has forced us to evolve new techniques, design new equipment, meet new challenges.

I say "we." We are the crew of the explorer ship *Stardust*. Back on crowded, polluted Earth our names are legend, if not actually myth. Probably not one person in a thousand who has heard of us really believes we exist. In the stress of just surviving on a planet that is eating itself up, they have forgotten. And though the *Stardust* was assembled over Earth, its home has always been its mighty slip at

Tycho Base on Earth's Moon. It is there we return, with the records and the artifacts of our studies of alien worlds. Less and less, Earth sees us. And so Earth has largely ceased to remember.

Pegleg and I strolled back across the grassy plain that formed the top of the long flat mesa lifting abruptly for hundreds of feet above the endless marsh. From orbit we had spotted it, a natural landing field. And when we had completed our reconnaissance of the planet from space, Cap'n Jules Griffin hadn't found a better place to bring the *Stardust* down.

Pegleg Williams had no responsibility for helping me with my concerns. He's a geologist, and there is none better in space. My interest is life, all life, wherever I can find it. Roscoe Kissinger, galactic ecologist, if I have to have a title. But the life I pursue occurs in Pegleg's geological situations, and so we've always been a team. Where one has a weakness, the other often has a strength. Between us we usually manage to get the job done.

The small communicator on my belt whirred and crackled.

"Dr. Kissinger! Dr. Kissinger! Dr. Rasmussen would like a brief conference, at your convenience. — On the carpet again, Roscoe! Respond, please. I'll have to tell him something."

Stony Price, communications chief, was in good form. Stony gets his jollies by putting a little touch of Stony Price in every communique. He never read one straight in his life. I flipped my response switch.

"Wishful thinking, Stony. I'm in better repute than you are. Tell Johnny I'm coming in. Out!"

The huge gray metallic cylinder that was the *Stardust* lay at full length, all fifteen hundred feet of her, half a mile away across the almost level plain. Even at that distance we could see that ports were open, platforms and antennas extruded. The grassland was dotted with people. All the sounds were human sounds. Not far from the ship a gaggle of young technicians had roughed out a softball diamond and were relaxing from the last series of Ultraspan stages with a noisy game.

Overhead in the blue sky a few fleecy clouds hung high. We lifted our feet against a gravity a little greater than Earth's and filled our lungs with air satisfyingly laced with oxygen. It was faintly tinged with the miasmal odors of the marshes, but if we hadn't known that they stretched away on all sides of us, I doubt that we would even have noticed.

The relaxed feeling, the feeling of security that was evident everywhere here, was an unusual thing after a landing. Ordinarily,

the first hours on a new world were tense, tentative. If the planet was compatible in atmosphere and temperature range, pleasant in appearance, there was always the possibility that things were not what they seemed. There could be fierce and antagonistic life forms. There could be hazards no tests could detect. But here the hazards were obvious, and nobody seemed to care.

"We're getting blase, Roscoe," Pegleg observed, as we strode along. "Finally, after years, we're sated with wonders. On all sides of this uplift is a Mesozoic zoo to stun the imagination, and nobody but us even bothers to go to the edge and look. They play baseball!" His disgust was obvious.

"They know they're safe up here," I said. "That's not usually so evident. They can look tomorrow, or next week. Face it, a series of Ultraspan stages *is* tension-building. We've come fifty-two light-years in four stages."

"Just the same," Pegleg insisted, "it ain't natural. Something should be happening. I wish one of those big varmints in the guck down there would unfold wings and come sailing over. Then maybe at least somebody would show a little excitement."

"They might look up," I said dryly. "Don't worry about it. Let's go see what bee Johnny has in his bonnet. He's probably got some excitement all planned."

The *Stardust* loomed, and we headed for the personnel port nearest the control complex. Rasmussen would be in his office.

"*You* were summoned," Pegleg pointed out. "I wasn't mentioned. Johnny's not liable to come up with anything I'm not familiar with, anyhow. I think I could use a nap."

I was halfway down the control corridor before I realized that that wasn't like Pegleg. He never missed a chance to butt in. His lack of respect for anyone's privacy was a major contribution to his general lack of popularity. Not that he cared. His sour personality didn't ask for approval. But his many competencies demanded respect. And that he did get.

"Come in, Dr. Kissinger."

Dr. Johannes Rasmussen, research chief and director of all the *Stardust's* many activities, lounged slightly in his desk chair. His neat bow tie was slightly askew. You wouldn't have noticed these things, but then you don't know Johnny Rasmussen. To the chief, there is only one way to dress — immaculately. There is only one behavior pattern — impeccable. In these matters I have always distressed him, for I am large, negligent and usually disheveled.

But we get together in our thinking. No more innovative,

original scientist lives than Johnny Rasmussen, and they tell me I'm not so bad in these areas myself. Anyhow, I appreciate them.

"Roscoe, what's happening to the crew?"

Johnny's tie might have been crooked, but his cold gray eyes were steady and concerned. I realized that he was, as usual, a little ahead of me.

"There *is* something," I agreed. "I think I've only become aware of it in the past few minutes. Little things. Nothing you could put your finger on. Pegleg felt it too."

I sprawled into the oversized chair that I think Johnny keeps for my special benefit.

"Would you believe," I added, "that it's affecting you as well?"

"That is quite possible. What are the symptoms?"

"You're slumping in your chair. You didn't get up when I came into the office. Your tie is atilt."

Automatically the chief's long fingers went up to the errant neckpiece. He nodded slowly.

"Yes," he said, "it could be like that. Little things. But perhaps they will get bigger."

"Undoubtedly," I said, "but at least we're alerted. What have you done?"

Rasmussen now consciously sat upright in his chair.

"It's something in the environment, of course. I have prohibited any tasting of native biomass. I have requested a recheck of atmosphere composition and a critical analysis of all materials being blown about by air currents."

"Any results yet?"

"Dr. Peterson has reported. Her original analyses are confirmed on all counts. The pollens, spores and microorganisms in the air are varied, but there is no evidence yet that they are other than innocuous. Now she is running time tests, using laboratory animals."

"There goes my home life," I grumbled. "When she gets caught up in these long-term things, I don't see much of her. Those little bitty bugs are more fascinating than I am."

Rasmussen's cold smile, a brief showing of teeth beneath his immaculate mustache, was not sympathetic.

"You married the best microbiologist in space, and you did it, I'm sure, with eyes wide open. She's good because she's dedicated. Take the bitter with the sweet."

"Nicely phrased," I said. Very few people saw this side of Johnny Rasmussen. And how right he was! Just an occasional glimpse of Lindy meant more to me than the full-time company of any other woman could possibly have meant. She's all I want. All I'll ever want. In the galaxy there couldn't be another like her.

I came back to the problem at hand.

"Does this mean," I asked, "that the research teams can't go out?"

Slowly the chief shook his head. He looked as baffled as I'd ever seen him.

"Too indefinite. Too tenuous. I wouldn't be able to justify such an order. There really isn't anything tangible. Fortunately, there is no evidence that animal evolution here has progressed beyond reptilian forms. We can rule out antagonistic technologies."

"Now I take issue with that," I said promptly. "That's why I asked about the research teams. I'd like to check out a curiosity."

It didn't seem like much when I tried to put it into words, but I told him about the cries.

"They were out of line," I reported. "This world is full of sounds, and they are just as primitive as the forms that make them. Those calls didn't fit. They had a purity, a delicacy not compatible with anything we saw from orbit. And, as Pegleg said, they were given because of us."

"An impression," Rasmussen said.

"A fact," I insisted.

Johnny smiled his brief smile. "A fact," he agreed. "Unsupported. Go ahead, Roscoe. I'll have Mr. Price alert all personnel to what seems to be the situation, and I'll authorize all major researchers to use their own judgments. But," he added seriously, "maximum safety precautions. Especial attention to communication. Stay in touch!"

Actually, the first chore was to get into closer touch with the problem. The mesa made a fine landing field and home base, but it was as completely isolated as any spot we had ever used. Perhaps a dozen miles long and three or four wide, it was a nice fortuitous happen-so, a geological oddity. Pegleg had anaylzed it in half an hour.

"Deep volcanic extrusion," he said. "Basalt and granite. You might think volcanic neck, if you can envision a volcano with a throat this size and shape. Only thing unusual about it is that it's so solitary. Normally, there would be a chain of them. But, as we know, our pics from orbit show no other high spots for hundreds of miles."

Whatever the origin, the practical difficulties it presented were obvious. From the edges on all sides cliffs dropped sheer, seven to eight hundred feet into the marshes. There were no breaks. To descend would call for mountaineering techniques, and there would be no such thing as getting back up in a hurry. From the behavior, size and numbers of some of the marsh

denizens, that represented a distinct disadvantage. Of course, it worked both ways. They couldn't climb the cliffs at all. I could sit comfortably on the lip anywhere and watch behavior under ideal conditions. And that's probably what I would have done — if I hadn't kept remembering those clear, haunting cries.

But, instead, I did what I usually do when the problem is strange. I called for the scoutboat I use when I can get it, and for the pilot I prefer. Though this was the only practical way of getting off the mesa, I wasn't too surprised that none of the needle-shaped airboats were in use. Nobody seemed to care whether any work was done or not.

"Joy ride, Dr. Kissinger? Or do we have a target?"

Young Pete Watts was my pilot. Pete and I understand each other. He'll go anywhere I say, do anything I ask, and have fun doing it. He can make a scoutboat do things even the designer never imagined. More I couldn't expect.

"Both, Pete. Only thing is, I don't know what the target's going to be. So the joy ride comes first."

The scoutboat lay in its slip inside the *Stardust*, the only place where a scoutboat can come to rest. A touch of the pilot's finger on the control board before him would activate the airboat's port; another touch and it would launch into space like the torpedo it resembled. But Pete lounged in his seat.

"Dr. Williams communicated. He said that if you were going out he was to be notified. He also said that if we went without him he would lay a crippling malediction on your descendants for twelve generations. So I notified him."

"Hum-m!" I took the researcher's post, leaving the observer's seat for Pegleg. "Twelve generations! That's quite a lot, since I have no descendants at all so far. I guess we'll wait."

The personnel entry light glowed, Pete touched a switch, and Pegleg strolled in. He took the empty seat without comment. The pilot settled in his place, all business now.

"Ease her out, Pete. Give us a couple of slow circles of the mesa, then take us up to a thousand feet. Give Dr. Williams a view of the only geologic object in the landscape."

"There speaks ignorance," Pegleg observed. "It's all geologic. What's a planet? Nothing but a geological mass spinning in space around another geological mass. There are details, of course. An envelope of gases, a film of water, a scum of replicating organic units, all of them, transient. Here today, gone tomorrow."

The scoutboat moved smoothly and silently from its slip, rendered

weightless by its timonium anti-gravs, propelled by its noiseless timonium engine. We swept in a wide arc around the uplife. Below us the midget figures on the ball field scarcely looked up as our shadow flowed along the ground.

On the highest headland at the end of the mesa I could see a little red dot. It was Ursula Potts' red umbrella. Planet succeeded planet, problems changed, but the *Stardust* program could depend on Ursula. I knew exactly what she looked like, sitting on her camp stool under the edge of that red dot, a scrawny wizened figure with strange pale eyes, and on the easel in front of her a picture growing, a view of something in the landscape that often no one else could see.

I pointed. Pegleg grinned.

"We goofed," he said. "We should have asked her about the calls. She's probably painting one this minute."

"That'll put her one up on Charley Knight," I agreed. "I hadn't forgotten her. After we've had an overview of what the jungle is like, I'll see what her feelings are. Take us low over the marsh, Pete, and let's get close-ups of that replicating organic scum we've been hearing about. I suppose we could navigate that scene in a skimboat, but it wouldn't be too soothing to the nervous system."

Closer views confirmed that impression. There were great stretches of shallows, and out of them grew lush, tangled masses of fleshy plants. Huge wide-winged insects darted over them. Ponderous reptilian forms wallowed back and forth through the mud, tearing at and gulping down the wide juicy leaves in slobbering untidy mouthfuls. And there were other, swifter creatures that had no taste for the plants. They flung themselves wildly onto the plant eaters, striking with great curved talons and tearing chunks from the living animals with dentition that had to be seen to be believed.

The open water was scarcely less chaotic. Big fish swarmed, villainous long-toothed kinds that endlessly pursued schools of smaller ones. And there were swift, sleek plesiosaurlike swimming reptiles, with long sinuous necks and tiny, armored, wickedly toothed heads.

"Mother Nature gets it done, but she's sure messy about it," Pegleg commented. "Come back in a few score millions of years, and all this won't exist even in memory. The presence of the mesa says that this is an area subject to uplift. Can't you see it?" He waved dramatically. "A long rugged mountain range, lifting high, with snow-capped peaks, waterfalls, wild mountain streams. Out to the east, where the jungle stretches

now, there'll be high rolling plains, big slow rivers, some kinds of assemblages of thinking beings. Towns. Cities. Agriculture. Industry. Eventually they'll be crowding each other, polluting their air with the fossil fuels forming this minute in the rampant growth, muck and confusion we're flying over. Civilization! Does it sound like something you've heard before?"

When Pegleg gets full conversational momentum, he's like a boulder rolling down hill. And just as hard to stop. But I tried.

"Easy," I cautioned. "Where are you getting all those thinking beings? To have civilization, you have to put your mind on it. And to put your mind on it, you have to have a mind."

"You don't have to be prompted. They're down there, of course. Some will survive. Some will adjust and evolve. It probably has happened on many worlds before. It's the same sequence. Only the details are different."

My zoom binoculars gave me close-up after close-up as the scoutboat drifted at slowest speed. Pegleg's general thesis might have been all wet, but there was much in this particular world to justify it. The Earthlike similarities were all there. The higher plants had stems and leaves. The more complex animals were tetrapods.

"With your insight," I suggested, "you can probably tell us what the thinking forms will look like. A thumbnail sketch will do."

Pegleg grinned.

"They'll have thumbnails — and opposable thumbs to grow them on. They'll have big much-convoluted brains and big cranial spaces to contain them. Otherwise, they'll be tetrapod, using the rear appendages for locomotion, keeping the front pair free so that they can use those opposable thumbs."

"I don't see how you do it," I said admiringly. "What do they sound like to you, Pete?"

"They sound like us," the pilot said. He looked back at us quizzically. "With his imagination, I would have thought Dr. Williams could do better."

"Is there anything better?" Pegleg looked almost serious. "We may have loused up our planet and let our species reproduce into an overcrowded shambles, but don't forget that we also built the *Stardust*, that we discovered Ultraspan, that we made it possible for us ourselves to be here, fifty-two light-years from the homeworld, watching a planet in the middle of the process of making the same mistakes."

"Maybe they'll do better," I said. "I reject the idea that they'll inevitably make the same mistakes."

"As the old man said, when told that there was no Hell, 'Wait and see.'" Pegleg had the last word, knew it, and retired with dignity.

The jungle ahead rose like a great green leafy wall. I hadn't overestimated the size of the trees. Beside them the famed sequoias of Earth would have been little more than saplings. They grew closely, in almost patterned stands, and they were so huge that there was probably space for the scoutboat to navigate between them. But along the forest edge, at least, every opening was laced with branches and wide clusters of leaves spread to catch each possible yellow ray of the hot sun.

"Cruise along the boundaries for a bit, Pete. We'll look for any overlap between marsh and jungle life. Records are all very well, but for me there's no substitute for personal look and listen. Somewhere back in there are beings that make a different sound."

The automatic cameras were clicking away. I turned up the microphones, and every whisper from jungle and marsh came plainly and undistorted from the small speaker at my ear. The scoutboat drifted, noiseless as a ghost.

Silent watching can become almost hypnotic. Tensely I scanned every break in the jungle wall. Without conscious effort my ear sorted the medley of sounds, searching for refinement, for sophistication interwoven with the cacophony of grunts and roars and splashes of the big beasts of the water. Pegleg sat relaxed, seeming to study the shoreline beneath us with half-closed eyes, but I knew he wasn't missing a thing.

"Down there, Roscoe!" Pegleg pointed with a long finger. "That's the third time I've seen it. There's a narrow tongue of light-colored bottom, like an underwater pier, extending out from the jungle wall. And where it comes out there's a low break in the vegetation."

I could see it well enough. I had seen the others, and interpreted and discarded them.

"Stream mouth," I said. "Undoubtedly the land is higher back in the jungle and has a drainage system. Your pier is a delta, where the water drops its silt."

Pegleg shook his head.

"It doesn't pay to know too much. Gives you too many answers besides the right one. Could we take another look?"

"Swing us around, Pete. Go down to thirty feet."

Pegleg was right.

"No current," I admitted. "The streak is uniform in width, and straight. Something made it."

Pegleg was measuring with a miniradar.

"Barely underwater," he said. "Twenty feet wide. A hundred long. Like I said, a pier."

"Now all we need to know," I said, "is who or what would have any use for a pier underwater. They could have spent another five hundred bucks and raised it high enough to avoid wet feet."

I suppose we accept new ideas more readily than most scientists, for landings on dozens of worlds have taught us that there's no such thing as an unlikely situation. That evolution Pegleg had been speculating about didn't have to follow the Earth sequence. Aware beings, perhaps of advanced competence, could conceivably be present here already. And there was no law that said that they could not be aquatic. I had no mental blocks to believing anything the evidence supported. In fact, it may be that I was too ready to believe.

"Take her high, Pete. Brush the treetops, and let's see if we can find any jungle plantations, any hidden cities, anything to go with the implications of those underwater piers."

We did that, sweeping slowly back and forth for a hundred miles or so. It looked pretty much like the canopy of any other jungle. A little grander in scale, perhaps; a little more varied in composition. The bright sun glinted on huge leaves of many shapes. The whole expanse rippled and undulated like the surface of a vast green sea in the steady breeze that blew.

"No calls, Roscoe. They see us. They know we're here. They're probably pretty puzzled because they've never seen anything bigger than an insect fly before. Seems like the vertebrates here are a little backward in developing flying forms."

"They, huh? Another one of those. Seems to me we spend half our time trying to find out who 'they' are. You, I take it, think 'they' built the piers."

"Not a doubt of it," Pegleg said. "The calls were not primitive. The piers show a definite expertise and purpose. I put all that sophistication in one package."

"More reasonable than you often are," I admitted. "Then our flight may be believable to them, after all. Some of those insects down there are three feet long, and they zip around pretty lively."

"A scoutboat is forty feet," Pegleg pointed out. "That's bigger, ain't it? Further, it has no wings and makes no noise. I said they were puzzled. I stand by that. An intelligent, thinking puzzlement."

"Nothing to it, Pete," I said to the pilot. "Dr. Williams has it all worked out. All we have to look for is a creature that's obviously aware — and puzzled. That shouldn't be hard."

"I'm glad I'm just the pilot, Dr. Kissinger. I get you where you want to go. I'm not supposed to think."

"Try it sometime. You might like it," Pegleg advised.

Pete has worked with us so much that he can join the conversation in the same vein. And behind the chitchat we all grapple with the problem, whatever it is, and sooner or later we solve it. But the pilot just grinned now and waited for the order for the next move.

"I think we've seen the layout," I decided. "Take us down over the marsh again, but stay high enough for perspective."

The scoutboat dropped over the edge of the jungle wall and swept downward and outward in a long slow glide. Ahead, the mesa seemed scarcely more than a speck in the endless watery wastes.

Then Pete made a swift movement. The scoutboat swerved, banked steeply in a tight curve, and the jungle rushed back at us again. I was glad of my stabilizing strap.

"Straight ahead, Dr. Kissinger! At the end of the pier! Somebody — or something — is playing horsie with a dinosaur!"

I got a quick glimpse of it. The cameras probably saw it clearly. Pegleg's narrow face broke into a satisfied I-told-you-so smile.

"There you are, Roscoe. Tangible confirmation of the marvels of the human mind. Did you see where it went?"

"I saw."

It had splashed the length of the pier and practically darted into the jungle through that break in the foliage. It wasn't the biggest of the big reptiles below, but it was big enough. I got the impression that it was a carnivorous type, with heavy haunches and a huge head. And there wasn't a doubt that something was riding it.

"The rider," I demanded. "I looked too little and too late. Did you see?"

"A young beautiful maiden," Pegleg said. "A maiden with golden hair."

"You've been away from your lovelies on Earth's moon too long. You saw it first, Pete. Any clear impression?"

Pete eased the scoutboat into a big slow circle above the end of the pier. Nothing showed in the jungle opening.

"It was riding the beast's shoulders," he said thoughtfully. "It did have hair, long pale hair, blowing back. It was slender and white. Manlike."

"Womanlike," said Pegleg.

"It's an obsession," I said. "The longer we're in space, the worse it gets." I looked at him speculatively. "This time, though, I think it'll have advantages. Any reluctance you may have had about

going with me into that outsized rain forest over there may be weakened a bit. A princess who rides a tyrannosaurus! That's worth getting a little wet for."

Pegleg looked doubtful.

"I foresee difficulties. We'll not only get wet, we'll get eaten. There's no place to get into the jungle from the scoutboat, and I'm not about to come across that varmint-ridden space from the island in a skimboat. But you've got this all worked out, I take it."

"Partially," I said. "Partially. We could go in the same way they do. Pete can drop us off on the pier, and we'll wade on in. The water's only about knee-deep."

"Suppose we meet somebody coming out. Do we pass on the right or on the left?"

The pilot chuckled. I kept my face composed, but it was hard.

"I'm not familiar with the customs. Actually, I don't think we'll meet anybody. As you said earlier, they'll know we're there. We'll just have to play it by ear. We've done it before."

"There'll be a last time," Pegleg prophesied gloomily. "I only hope this isn't it."

"Take us home, Pete," I directed. "We've got planning to do."

The scoutboat circled, leveled, and flashed for the mother ship. In less than sixty seconds it slowed into its glide over the mesa, and its port opened in the *Stardust's* gray metallic side.

We were just easing into the slip when our communicator came alive. Stony Price had a familiar message.

"Attention, all directive and advisory personnel. Dr. Rasmussen requests the pleasure of your company at dinner this evening, 1800 hours. Appropriate dress. Dr. Rasmussen regrets this short notice — but probably not as much as the chef does! Eat hearty!"

The more I attend Rasmussen's dinners — and I've done it at least monthly for the past ten years — the more I marvel at the man who gives them. Johnny Rasmussen rarely issues a direct order. He makes you aware of what he wants by indirection, by oblique inference, sometimes even by example. The dinner is one of his standard gambits. Always the food is special, the atmosphere is relaxed, and you learn more things in passing than you'd be likely to in a staff conference. Different things, too. Though I've eaten many of them and never found out what the emphasis was, I never doubted that there was one.

It was pleasant to meet my wife again, even if only as a passing dinner guest. I literally hadn't seen her since we made planet-fall, almost thirty Earth hours before.

It's always nice to see Lindy. After more than nine years of marriage she's still new, exciting. Forever different. Like now. Her dinner gown was a golden sheath, and you can imagine what her tall form and magnificent figure did with that. Golden slippers were on her feet. Her red curls were piled high in the fashion that suits her best, and she had somehow contrived to dust them with gold. A double rope of the strange amber pearls from the planet Gosson lay across her bosom. At her left shoulder she displayed a golden orchid pinned with a pale gold clasp. As always, I was proud. She made every other woman down the long curved table look dull, dowdy, unfinished.

As usual, it was almost a trick to recognize my co-workers. From the practical and often scanty garb of field and laboratory they had metamorphosed into formal ladies and gentlemen. Gracious dinner gowns, dinner jackets, black ties. Faces were carefully shaved, beards and mustaches trimmed and groomed, and from the ladies delicate clouds of the perfumes of a dozen planets vied with the distant fragrances of food.

This was the gathering of which Johnny Rasmussen never tired. On the stroke of 1800 hours he moved to his place at the head of the table, tall, immaculately groomed, his lean face impassive, his mustaches waxed to points. But his approach was a little different this time.

"Ladies and gentlemen, please accept my apology for this sudden invitation. It is not good form and may have been inconvenient for some. But," and his still face softened slightly and became genteelly pleasant, "as Mr. Price often says in his communiques, you have to eat somewhere." His impersonal gray eyes roved the length of the table, and he broke another custom. "Although it has become my habit, I will not call names. After ten years together in space, I assume you are acquainted. I am delighted to have you here. Won't you please be seated?"

While Johnny's dinners were almost stereotyped, the seating varied endlessly from invitation to invitation. There's always a reason for this, but it's usually obscure. This time it was more obvious than usual, at least to me.

Lindy's place was at his right. I was next, a pleasant surprise, for Johnny's place cards have no regard for the man-and-wife relationship. He puts you where he wants you. Pegleg sat across from Lindy, on Johnny's left. Ursula Potts was next to me. I considered that alignment while I disposed of the excellent soup.

"How'd the dragon painting go, Ursula?"

I had to turn my attention to my right, since Lindy was in grave conversation with the chief.

For once, Ursula wasn't keeping pace with me on the soup. You wouldn't believe that that scrawny little woman could put away the food she does. And she shovels it in like she's on a ten-minute fueling stop. But now she was strangely out of character. She took occasional dainty sips from her spoon. Her pale eyes had a different gleam.

"They are not dragons, as you are well aware, Dr. Kissinger. And, if you must know, I was not painting them. There are things here that are much more significant." She held her old head regally high, and the big bun of gray hair, which she usually thrusts full of paint brushes when she works, bobbed as she moved.

I stared. That was Ursula? Usually her speech was sparse, staccato, stripped. If one word would do the job, that's all she used. And as for politeness — Ursula made that take a back seat to efficiency.

"Well, color me pink and call me a sunset," I said. "Now what significant things did you find out there that made you ignore horizon - to -horizon squabbling, fighting monsters?"

"We have seen pink sunsets only on Primrose," Ursula reminded me primly. She paused for an eyedropper full of soup. "I was painting mushrooms."

"Out there on that windy point, you found mushrooms? Enough to turn your attention from the marsh:"

Ursula looked at me pityingly. "You are familiar with my methods, Dr. Kissinger. You know quite well that I am often impelled to record things not actually physically present. So far as I know, there were no mushrooms on the point. I have seen none at all since we landed."

"Hum-m! And yet you spent the afternoon painting them. How do you explain that?"

"I see no reason to explain it." She tossed her head loftily. Then she hesitated, seeming for a fleeting moment almost confused. "And yet, at one time during the afternoon, it did strike me as a bit odd."

"No," I decided, "you had a reason. Put your mind on it."

But the moment passed. "Dr. Kissinger," she said coldly, "I will conduct my activities without advice. I have managed very well in the past."

You may be sure that that rang the bell in my head loud and clear. I'm one of the few aboard the *Stardust* whom Ursula really trusts and likes. I can talk with her when nobody else can.

"No one better," I agreed

promptly. "Sorry, Ursula. I was out of line."

"I forgive you, Dr. Kissinger," she said grandly. "I can see that you're not quite yourself this evening."

I wasn't *myself!* I raised my eyebrows and devoted myself to the soup. And when Lindy reached a break in her talk with Johnny, I spoke to her in an undertone.

"Say something to Ursula," I whispered. "She's a clue, believe me. She's been out all afternoon, and she's really stoned on something. Involve Johnny in the talk, if you can."

Lindy smiled at me sweetly, but under the table she squeezed my hand. And it wasn't very long before she made her opening. She did it by raising her voice to Pegleg across the table.

"You're very quiet, Dr. Williams. It isn't in character. Are you disappointed that this side of the planet is all flooded and covered with vegetation, without lots of pretty rocks sticking up?"

Pegleg looked at her keenly. He could tell that something was in the wind.

"I'm a versatile man, Dr. Peterson. I like change. Further, the less the overt geology, the less I have to work. I don't like to work. As for my being quiet, how would you know?"

Lindy's giggle peaked. From anyone else it would have sounded silly, but it was as much a part of her as her red curls.

"I'm sorry, Dr. Williams," she said. "I know I chatter. I just thought I'd give you a turn, since you seemed out of it."

Pegleg nodded gravely.

"Considerate, but unnecessary. I was preoccupied. I was remembering the beautiful maiden we saw this afternoon, riding out of the water and into the jungle on her pet dinosaur."

"Hope springs eternal," Lindy said, "but that is too ridiculous to comment on. You were out most of the day, Ursula. Did you paint any maidens riding dinosaurs?"

Ursula was still sipping her soup, though everyone else had finished.

"I did not, Dr. Peterson, but I do not regard it was ridiculous. Indeed, I feel that it is quite likely."

"This interests me a great deal, Miss Potts." Johnny Rasmussen's incisive voice joined the discussion. "Perhaps it would explain some puzzling developments we have begun to notice since we set down here. If there actually are thinking forms on the planet, these might be more believable. Can you justify your impression in any tangible way?"

"No." Ursula suddenly seemed more like her real self. "No

support. Just feel it. Fits with the mushrooms."

That clarified everything, like mud.

"I miss so much, cooped up in a lab when people are out and about having adventures," Lindy murmured. "*What* mushrooms?"

"Been through that already with your husband. Hate to repeat. Tell 'em, Roscoe." Ursula was returning to normal while we watched.

Since I didn't have much to tell, it didn't take long. I wound it up with a tentative question.

"Would it be possible to have a look at some of your sketches, Ursula? Sure, I know your custom, but Pegleg and I are going out tomorrow. Might be an idea for us in them."

"No sketches." Ursula said. Her strange eyes now had their familiar gleam. "Just one painting, not finished. Came slowly. Not usual for me. — You may look."

"Miss Potts," Johnny Rasmussen asked keenly, "how long have you been back in the ship?"

"Hour. Hour and a half. Didn't come back until Stony came on with the dinner invitation."

"You were out all day?"

"Most of it." Ursula was being cooperative. She knew she had been behaving strangely, and I'm sure that her weird sixth sense was grappling with the why.

"By contrast, Dr. Kissinger, you and Dr. Williams were out briefly?"

"Less than an hour. The rest of the time we were in the scoutboat, which was of course using its own air."

"And I took a twenty-minute stroll." The chief reflected briefly. "Roscoe, you commented on slight differences in my behavior, and that of Dr. Williams. Did you also notice differences in yourself?"

"Sorry." I shook my head. "I guess I'm immune."

"He's so sloppy," Pegleg offered helpfully, "that the change would have to be pretty extensive before anybody would notice."

"I'd notice," Lindy said.

"But you haven't seen me for days," I protested. "I have grounds for almost unlimited self-pity. Since we landed, my wife has been totally involved in the public welfare."

"And the immediate future looks no better, does it?" My wife didn't seem depressed. "The air composition could not possibly have any adverse effects. I'm having every living fragment that is airborne analyzed, but even that doesn't help much. I'll have to know the *effect* of each on human metabolism and behavior."

"Need a guinea pig?" I offered. "At least, that would focus your attention on me."

"Not really," Lindy said cheerfully. "I have an overabundance. The whole staff, in fact. I *would* like to know how long each person stays outside the ship, each time, and where."

"A mere nothing," I said. "The *Stardust* only has four hundred people."

"Four hundred and thirteen," Johnny Rasmussen said. "Won't you need behavior reports on each person? What would be their nature? Are there any norms to refer to? In short, how can we help?"

Lindy raised her beautiful head high. Her green eyes sparkled, and her perfect smile was shed impartially on everybody. She looked less like a scientist you ever saw.

"That's what I like," she said with satisfaction. "Understanding. Faith. Cooperation. Help. Actually, it would be interesting to designate all personnel into pairs, each to report odd behavior of the other and the circumstances under which it occurs. Most would be useless, of course, but patterns might show. Could we try it?"

"We could," the chief said promptly, "and we will. Ah, the entree! I'd like your opinion Roscoe. I asked the chef to make a slight variation in the sauce."

"And in a hurry," too," muttered Pegleg.

That's the way it is at Johnny Rasmussen's dinners. Just the ideas come up. No development. It's still a social gathering.

The entree was roast reindeer rump, from Lapland, and the sauce was rarer still. Johnny knows I'm no gourmet, but I do love food, and I appreciate flavor. Come to think of it, maybe that's what a gourmet is. Anyhow, the meat was choice. Johnny was gratified.

It was good to see that Ursula had recovered both her appetite and her bad table manners. She tore into her roast like a hungry terrier, knife and fork in continual action. I'm more than twice her weight and only half her age, but she eats as much as I do. And, I suspect, enjoys it at least as well.

The hour was pleasant. Good food, good talk with the people we talked to best. All up and down the table there was appreciative attention to both. And when the dessert was gone, replaced by full-sized cups of good fragrant coffee and small globes of mellow brandy, Johnny made his brief speech. It was the reason for the dinner, but he didn't say so.

"Ladies and gentlemen." The chief didn't know that both those terms had been obsolete for years. He used them freely, and he believed in them. "Some of you are already aware that although this is a compatible planet in every way

that we have tested, there seems to be something in the environment that produces slightly aberrant behavior in crew members exposed to it. I say slight, because we have been exposed to it for only a brief time."

Johnny's long fingers curled around his brandy glass, and he took an appreciative sip.

"There seems to be no reason, as yet, to curtail any reconnaissance activities you may have in mind. Photography, mapping, collecting, wide-range surveys, all will be at the discretion of the directive personnel, as usual. Simply be warned. Look for any change in outlook, in attitude, both in yourselves and in your co-workers. You will, I think, be aware of any such. When recognizable change occurs, return to the ship. You will then, as specimens, be of interest to the biochemists and the microbiologists."

He paused. There was neither question nor comment. Apparently the concept and the directive were completely acceptable. Johnny drank coffee, keeping his sleek mustache immaculate.

"Dr. Peterson will request your cooperation on some records she has in mind. When she is ready, you will be informed."

He rose and bowed, elegant and suddenly remote. I don't know how he does that, but it's most effective.

"I have been delighted to have you here this evening. For those who care for it, there will be additional refreshment in the lounge. Good evening!"

As usual, it was almost like a disappearing act, the way he slipped away. But to us it was normal. We were used to it.

Pegleg and I didn't formally plan the next day's trip. We didn't have to. We had done all that by implication while we were aboard the scoutboat, surveying the piers and the jungle wall.

I had ordered the scoutboat for sunrise. I made the preparations I thought necessary, recorded a trip tape, and contented myself with talking to Lindy on our closed circuit, for she had stayed in her lab with the tests she was running. When I arrived at the little craft, Pete and Pegleg were already in their seats. I could have described Pegleg's pack to the last item — and it would have differed from mine only in the fact that he had no tobacco. I like a cigar in the field, when conditions allow.

"Those blasted varmints have been up all night," Pegleg remarked, as we drifted toward the distant jungle. The teeming marsh was as active and as violent as at sundown. Grunts, splashes and guttural roars came clearly from our speakers.

"Keep an eye open," I said. "I'd hate to miss one with a rider."

"Beautiful thought," Pegleg murmured. "Love that golden hair!"

Pete knew what we wanted. He swung low over the pier that we had seen in use.

"The ladder, Pete."

There's only one way to leave a scoutboat. It's primitive, but it works. We've practiced until we can do it without giving it a thought.

The emergency hatch next to my seat slid back, twenty feet of pliable ladder dropped through and swung. Pete started his run at the end of the pier; the scoutboat slowed almost to the pace of a walking man. I climbed down. The white strip came up to meet me and I dropped off into warm oily water. The scoutboat circled and made another pass, and Pegleg dropped a few yards away. I punched my belt communicator button.

"Stay in the neighborhood, Pete, and keep in touch. We ought to know some kind of score in an hour or two. Enjoy the view!"

"Roger, Dr. Kissinger. Have a nice swim!"

We weren't swimming, of course. The water was no more than knee deep on the pier. Since we were sheathed to our necks in pliable skin-thin waterproof plastic, we weren't even damp.

We settled our packs comfortably, experimented with the footing. I had expected the pier to be slippery, but apparently it was much used. There were no algae on it, no shiny places. It was firm, even worn. There was no way of telling how it had been built, but never a doubt that it was a made thing. It was refuge for the swarming tiny life of the warm shallows. Many sizes of tadpole-like forms clung in myriads to its uneven surface.

"Morning traffic hasn't started," Pegleg said, "but that doesn't mean it won't. Notice that nothing big comes in close? Think they're conditioned to stay outside the three-mile limit, so to speak? Does something repel them?"

"You're rushing me. How would I know? Maybe it's just Sunday and everybody's off. Whatever the reason, it gives us a break. Having to use a laser solves no problems."

I checked my gun in its holster, making sure it wouldn't stick if I needed it. Pegleg grinned as he followed suit.

"You're not too easy in your mind, are you? Where's the old Roscoe who used to lap up this kind of thing? Is your sense of wonder weakening? Is your spirit of adventure subsiding?"

The fact that Pegleg was talking tipped his own state of mind. The

tenser the situation, the more garrulous he becomes.

"*This* is the old Roscoe," I said. "It was the young Roscoe who didn't have sense enough to make a mature evaluation of a predicament. Let's stroll on down this watery road and get the suspense over. Notice how neatly pruned that arch into the jungle is. Unless I miss my guess, that leads into Superhighway Number One."

Well, I missed my guess. It didn't lead to anything of the sort. But before we reached the arch, we suspected that it wouldn't. For we were welcomed. Or rather, we were noticed. The clear fluting call pealed close at hand, but it came from high in the giant trees. It was answered from farther up the coast. Others took it up, one after another, each from a different location and never more than one call at a time. They, whatever they were, didn't interrupt each other.

"They may be calling up their scaly watchdogs," Pegleg said. "I think I'll be happier when I get under the trees and out of dinosaur park."

Actually, it didn't seem to be a valid concern. As near as I could tell, the big reptiles offshore were not affected in the least by the calls. I doubted if they could even be aware of them.

We splashed on under the arch and into the deep gloom of a tropical forest. And, as I said, there wasn't any road at all. The end of the pier emerged from the water and spread out for a few yards in a fan-shaped terminus. Beyond that edge was just the open, damp, hard-packed jungle floor, covered here and there with drifted piles of enormous leaves. The location was a wonder, for a fact, but it was a natural wonder. Aside from the pier, there was nothing that even hinted at the presence, either now or in the past, of thinking beings.

I thumbed my communicator switch.

"We're inside, Pete. Do you read me?"

"A little fuzzy, Dr. Kissinger, but well enough."

"No roads, cities or trolley tracks," I reported. "Forest floor well above water. Understory scanty to missing. It's nice open green gloom between the boles of the biggest trees we've ever found anywhere. Tell Dr. Rasmussen we will proceed as described on the trip tape."

"Roger. I recorded the calls. What made them?"

"We've no idea. They were from high in the trees. That sort of eliminates Dr. Williams' golden-haired maidens, but other than that, no clues. We'll lay a back trail and contact you each hour. Between contact times, you're on your own. Have fun."

"Roger. Scoutboat out."

As our eyes grew accustomed to the subdued illumination, we realized that our semiblindness was simply relative. The light was filtered, but there was enough. As old-timers in the woods habitually do, we scouted in circles from the end of the pier, looking for anything, anything at all that would give us a focus.

"Right here, Roscoe."

Pegleg stood at the edge of a wet bare patch of soil and pointed. The huge track was clear and deep. It hadn't been there more than a day or two. And the thing that had made it had been running.

"Made yesterday, I shouldn't wonder," I said. "Back in the good old Smithsonian, what would you call that?"

Pegleg studied the great three-toed impression, nearly a yard in length.

"*Tyrannosaurus* almost, but not quite. Same type of critter. Probably a bit bigger."

The next track was more than a dozen feet away, partly hidden by the leaf fall. It was easy enough to follow the beast.

"Ran by striding. Two legs only. See any old tracks?"

We found some, but it was evident that the creature rarely came here.

"Came in because its rider was in a hurry," Pegleg suggested. "A carnivore that big would live in the open, out there in the water and muck where the action is."

"Then we chased them in," I took it up. "Might as well see where they went."

Pegleg looked at me quizzically. The filtered green light gave his narrow face a strange, alien look.

"Are you sure you want to know? Wouldn't they tend to resent intruders, considering the trouble they took to get out of our way?"

"Unless we check, we'll never find out."

The whole exchange was like one man talking to himself. As always, we knew what we were going to do. We had done it many times before.

Pegleg zipped open a small bag at his belt and fished out a tiny metallic ball. It glistened as he tossed it to the ground at my feet. It was no bigger than a radish seed. I put my heel on it, pushing it into the soil. Then Pegleg aimed his radiation detector tube at it and got a satisfying chatter.

"Beats blazing the trees with a hatchet," he remarked. "Although, if you prefer to be primitive, blaze away. The bark on these big fellows must be a foot thick, and they may heal overnight, for all we know."

"I'm as modern as anybody," I said. "Also, I hate work."

We stepped off on the dinosaur trail. The little pellet in the mud

would lie there and emit radiation for twenty years or so, which was somewhat longer than we planned to be around. Our detectors could pick it up anywhere within half a mile. So every mile we dropped another one. No matter how deeply we wandered into this unreal green shadow world, we could find our way out.

The giant spoor ran straight into the jungle, on and on between the mighty tree trunks. It was hard to remember that they were trees. They seemed more like huge columns, all combining to hold up an infinitely wide green high-vaulted ceiling. There wasn't a branch within a hundred feet of the forest floor, and the great crowns laced together in an almost impenetrable roof.

If we had jumpers, now, we could catch this varmint in no time," I said. "I wasn't thinking. Might have known it would be clear of wood growth down here in this low-light intensity."

"This is too easy," Pegleg said. "Too empty. I'd welcome a jumper so the critter would have more trouble catching *me*. I've no doubt we'll find him. What I want to know is, what are we going to do with him?"

"As you may have heard me say before, we'll play it by ear. Have you forgotten the golden-haired rider?"

"She gets less and less interesting every minute. In fact, this whole caper is losing point every step I take. That hair was more likely a beard, anyway."

That was standard Pegleg repartee, but there was something wrong with it. It nagged me as we strode steadily along. Then I realized what the difference was. Pegleg *meant* it!

The canopy above us seemed to rise higher as we got farther from the water's edge. The light was better, too. There were even small patches of sunlight, streaming down like spotlights through occasional breaks in the leafy cover. The going was no trouble at all. The big tracks led us on.

"Pegleg," I said abruptly, "we've been breathing unfiltered air for more than an hour now. Do you think you're beginning to get a little funny? Notice any change in your attitude toward life in general?"

Pegleg didn't break stride. He looked amused.

"Me funny? How could you? I'm as stable as a rock."

"Nice symbolism," I said dryly. "Well, how about me? Notice anything peculiar?"

"No more than usual." He raised an eyebrow. "You're not just making conversation. What have I done?"

"Nothing," I admitted. "But

there's something. I can't put my finger on it — yet. And you watch me carefully, will you? We're in an ideal position to check out this hypothesis of change due to something in the environment. You saw and heard Ursula at dinner last night. I knew you were listening. She was under the influence of something."

"Agreed. And you think it'll happen to us. Right?"

"Ursula is a tough-minded old gal. She'd be hard to influence."

"Again agreed. Any ideas? Any clues?"

I shrugged.

"Only that painting. It didn't even look like Ursula's work. It was indecisive. Confused. Rows and rows of mushrooms, trailing away into the distance. Now you know and I know that if she isn't a witch, the old descriptions are all wet. The mushrooms play a part."

"Well," Pegleg said, "this is mushroom country if I ever saw any. Only thing is, I don't even like mushrooms. They're not human food. So — they won't effect me."

I had an idea.

"You wouldn't have to eat them. You wouldn't even have to know. They would come to you."

"You told me to tell you when you began to act funny," Pegleg drawled. "Okay. You are."

"Good," I said. "Keep an eye on me. I may be having hallucinations, but *I don't think I am.*"

We slogged on, the big tracks we were following clear on the damp jungle ground. I said no more. Pegleg works better when his curiosity is whetted. I knew that before long he would be seething. He likes to know what's going on.

"Two heads are better than one," he offered finally, "even if one is addled. I'd be glad to look your hallucinations over for possible further use."

I grinned at him.

"Depends on which head is addled. I dislike having my fantasies debunked before I can check them out."

"My head!" Pegleg said in disgust. "Otherwise, I'd be back in my lab in the *Stardust*, bourbon glass in hand, happily looking at the geosurvey pics we made from orbit. This is a fool's errand!"

"'Where is your spirit of adventure?'" I quoted. "Have you lost your sense of wonder? They're questions just as valid as they were an hour ago."

"We're going to need 'em both," Pegleg said tensely. "Look ahead!"

We had reached the end of the line of tracks.

Automatically I slipped my laser gun from its holster, checked to see that it was set to deliver its most concentrated beam. It was

reflex. Pegleg's gun was out, held negligently in his left hand, while he focused his zoom binoculars with his right. His narrow face had a faint, almost contented smile. Pegleg loves it when things begin to happen.

Except that now nothing did.

The huge beast lay almost prone, its great hind legs doubled under it, the long neck extended on the ground, and the enormous head relaxed, mouth half open, and nictitating membranes dulling the small reptilian eyes. At first I thought it was dead. But the gray plated hide twitched. A long narrow snakelike tongue lolled from the fanged mouth. The tapered tail shifted slightly.

"*Tyrannosaurus,* plus," Pegleg breathed. "You know, that's quite a sight. Is it asleep?"

I had another flash of insight. It fitted with the idea I had kept from Pegleg, just to get his juices flowing. Consider. How do you break a forty-five-foot-long reptile for riding? It was probably of negligible intelligence. It couldn't be trained. But it could be — *doped!*

"Not asleep," I said. "Just happy. Your golden-haired lady friend has slipped him a mickey. Probably keeping him handy in case the strange creatures from that big cylinder over on the mesa come in here and try to cause trouble."

"If you're trying to imitate Ursula, you're doing all right," admired Pegleg. "Where are you getting all this wisdom?"

I tapped my forehead.

"If you have an unlikely idea about a problem, but nothing else seems to fit, maybe you've stumbled on the answer. That's my position now. I'll bet we can go up, measure him, and count his teeth. Want to make a small wager?"

"You know my weakness." Pegleg's eyes gleamed. "But my mother didn't birth an idiot. *You* count his teeth. I'll measure his tail."

My belt communicator buzzed, and Pete's voice came on, faint but clear.

"Dr. Kissinger! Scoutboat calling Dr. Kissinger. Do you read me?"

I had forgotten about him. It had been two hours rather than the promised one. I gave my transmission full power.

"We read you, Pete. We're six or seven miles in. The going is easy. We have found the horsie."

"You don't sound worried," the pilot said. "Must be a tame one. Anything I can do?"

"Pass the word to Dr. Rasmussen and continue to stand by. We'll have a report later. We're okay. Nothing we can't handle."

"Optimism is all right in its place," Pegleg growled, "but that

is a questionable statement if I ever heard one. If he could see what we're looking at right now, he wouldn't believe a word of it."

"That's just Dr. Williams mumbling, Pete. He likes rocky country better. We'll call you in an hour. Out!"

We conferred and decided not to press our luck too far. Hypothesis was one thing. Betting our lives on it was quite another. So we circled the great prone beast at a respectful distance, making no abrupt movements and watching it carefully. Even so, it detected us. It heaved itself up ponderously, slowly, and stared in our direction with heavy-lidded unfocused eyes. Its long black tongue flicked at random.

"Woozy," I said. "Out on its feet. Whoever or whatever got it in that state did a good solid job. But I'll advance one more idea, and that'll be my quota for the day. I'll bet there's an antidote for whatever ails it, one that can be applied fast and that will make it alert and competent in a hurry."

Pegleg was making studies with his tiny palm camera.

"Possible," he agreed. "And since you've used up your thoughts for the day, I'll hit you with one. Whatever did it is here in the neighborhood and watching us this minute."

I grinned.

"All of a sudden I don't feel lonely any more. But I doubt if it — or they — will show if we sit around and wait. This varmint must have been stopped here for a reason. Let's stroll on for a bit and see if there's any change in the countryside beyond."

There was.

We hadn't gone half a mile before we began to see them. At first there was only an occasional one, then small clusters, and then they were scattered everywhere. Geared as our attentions were to larger things, we might not have noticed them if they had not been in scale. But mushrooms four feet tall? Those you do notice.

"As usual, Ursula wasn't off the beam. Here they are, just like in the picture. Now how do you suppose she managed that?"

"That's what we always say." Pegleg stopped to examine a wide purple specimen. "We always wind up with the same conclusion. She's a witch."

"A good witch, though," I said. "Somehow, things are beginning to fall in line. Ursula wasn't herself — and all she painted was mushrooms. There's a tyrannosaur back there that could use us for hors d'oeuvres — and all it does is give us a stupid stare. It's stopped at the edge of mushroom country. What's the common denominator? Mushrooms, naturally."

"Your imagination is working well," Pegleg said approvingly. "What about us? We're surrounded by the things, and there's nothing wrong with us."

"How do you know? Maybe we're equally affected and in no condition to judge. Maybe we just think we're behaving as usual."

Pegleg opened his mouth — a natural activity with him — but what he was going to say we'll neither of us ever know. From high in the canopy over our heads the cry rang out, strange, wild, but not the cry of a wild thing. It was the call of an aware being. I had been convinced of that from the first time I had heard it. This one, so close at hand, only reinforced my conviction.

We stood, staring up into the dense foliage, listening. But the call was neither repeated nor answered.

"That, I take it, was the call of a wild mushroom."

"No," I said, "but it's *about* mushrooms. It's related to the fact that we're here, where they are. We're trespassing."

"Good," said Pegleg. "Let's trespass some more. Notice how orderly these things are. The clumps are almost in rows. I'd like to see if there's any more evidence of tinkering with their growth."

"Mushroom farmers? You know, that's reasonable!"

"You should see me when I try," Pegleg said modestly. "I think I'm right. We're in the edges of the wheat fields, the rice fields, the maize fields of whoever or whatever makes those cries." He went through motions of dusting his hands. "Wasn't much of a problem, was it?"

"Elementary," I agreed. "Just for the record, though, tie up the loose ends. Like who and what they are, what they use the mushrooms for, what capacities they actually have for thinking and doing, how they dope and ride the dinosaurs — stuff like that. It shouldn't take you long."

Pegleg grinned. We've never been in a situation yet where a little nonsense didn't help our perspectives.

"Another mile through the rice fields, and something should turn up. It's my only suggestion, anyhow. We certainly can't climb these trees and look."

"I could agree with that. We dropped the eighth radioactive pellet, tested it, and set off at the same pace we had used in tracking down the dinosaur.

The nature of our surroundings was changing, subtly, as we strode along. It was something we felt, rather than any marked difference in what we could see. The area felt occupied. It was lived in. There were no buildings, nothing artificial, but the feel was there.

The mushrooms did change. There was no longer any possible doubt that they were cultivated, though what that meant we were not prepared to say. The only evidence was the orderly arrangements, which varied with the type of mushroom. Rows were rare, but they appeared occasionally. More frequent were clusters, big circular beds, or long undulating, wavering lines. Trees were ringed with a single species or with massed banked beds of many colors.

Shapes varied as much as color and size. Broad umbrellas, the height and size of a kitchen stool, were sturdy enough to use as seats. I tried one, gingerly, and it only swayed with my weight.

"If you can do it, anybody can do it." Pegleg literally bounced up and down on one nearby. "Like a padded cushion," he said, and bounced some more.

There were puffballs the size of basketballs, and larger. I kicked several that had grown dry and brown. Puffs of purple spore clouds rose like volcanoes in eruption. The "smoke" drifted away in streamers on the light breeze. Rows and circles of orange flasks, most no larger than pop bottles, emphasized and brightened the larger, more gross plantings. Occasionally these would erupt without warning, adding yellow clouds to the purple of the puffballs. I realized that every fungus, regardless of size or shape, was, at the proper stage of development, releasing spores by the many millions. The air we were breathing was inevitably full of them. They undoubtedly were spread all over this world by the planet-girdling winds.

That was something to think about. I checked myself mentally, groping for any change in attitude or physical capacity. I think I was disappointed to find that I felt as usual. Nothing different. Nothing wrong.

"We're overlooking something. A vital fact is staring us in the face. More walking is not going to help matters, either." I sat on a mushroom the size of a counter stool and shrugged off my packsack. "Let's consider. Look around. What occurs to you?"

"Lunch." Pegleg took a seat nearby. "By my stomach, it's high noon." He fished in his packsack, brought out a sandwich and began to munch. To me, eating is always a good idea, and so I set out my own food. I had a flask of synthetic milk, Pegleg his usual bottle of a thin pale wine he loves in the field. It was a familiar trail halt. We had done it together a thousand times.

I hardly noticed it at first, a faint shimmering in the air, a gradually growing fuzzy outline to all the objects around me. I looked at Pegleg. He was fuzzy too. And he

was shaking his head, blinking, trying to clear his vision.

"We've been had, Roscoe." His voice was a little thick, his words slurred and mushy. "We've been picked up like sitting ducks. Now I think I know how the dinosaur felt."

I stood up, staggered a few steps. It wasn't an unpleasant sensation. And I felt no panic. I was comfortable. Gradually my mind, like my body, had relaxed.

"Take a little nap," I remember murmuring. And that was it.

The lights were swinging, swinging, refusing to stay still. I rolled in bed in some irritation. Lindy was usually more considerate. She knew I didn't like lights in my face.

"Turn it off," I mumbled.

There was a high clear babble of voices, and someone came quickly to the bedside. In fact, several came. I like to wake slowly. That nice twilight zone between waking and sleeping is one of the most comfortable areas I know. I could feel that it was time to rise and shine. I was rested. But the sounds of several people were wrong. What was going on?

Slowly I opened one eye — and was alert in an instant. I lay still, adjusting, orienting, remembering. I wasn't in my bed. The pad under me was soft, but it wasn't mine. And the strange wide-eyed face looking down at me certainly wasn't Lindy.

I raised the other eyelid, checked everything within range of my now clear vision. Four beings leaned over the bed, staring at me. They were as alike as girls in a chorus line, which they resembled in several other pleasant ways. They all wore brief green tunics, cut, apparently, from the same pattern. The tops swelled in a most satisfactory fashion, and if the long graceful legs below them were found on all womankind, the planet Earth would be a definitely improved place to roam around in. They were pale, ghostly pale, and the wide, almost flat faces were not human. But they were attractive to one human and, I suspected, strongly attractive to another. He would especially like the masses of moonlight-colored hair that flowed to each slender waist.

"Pegleg." I spoke in an ordinary conversational tone. "Are you with it again?"

"Over here." Pegleg's voice came from some distance. "Don't try to get up. They've got ideas about that. They don't act as nice as they look."

You never get the expected response from Pegleg, and I wasn't surprised that he didn't sound serious. He sounded disgusted.

Golden-haired maidens all over the globe-lighted glade — and he was immobilized! I chuckled aloud.

Instantly my four attendants leaned over me. Each thin-lipped mouth widened. They were imitating my grin, and they must have divined my mood. They seemed to know that I wasn't angry.

I was curious, though. Pegleg had evidently wakened before me. He sounded like he was reporting from experience. So I decided to check it out. I sat up.

Each girl retreated a couple of steps. Their voices rose in a series of clear warbling notes, and they motioned me back with incredibly long-fingered graceful hands. There was something about those hands — but I had too many new things to adjust to right then. I kept my smile and stubbornly stood up. Nothing beats the old experimental approach. I got prompt results.

They didn't touch me. One of them held out what looked like a tiny plastic bag, pressed it, and sent a small cloud of yellow dust into my face. It had instant effect. My body simply lost the power of voluntary action. I stood rigidly. I couldn't move. Yet mentally I was as alert as ever. I could see what was before my eyes, and I could feel the four sets of long fingers as they lowered me gently back on the couch. How I could feel them! The shock of them almost caused me to jump, in spite of the action of the drug, whatever it was. I know I shuddered mentally. For the hands were cold — clammy cold.

I could tell that they didn't like to touch me, and in a flash of inspiration I divined why. My body was hot. No matter what they looked like, they were cold-blooded creatures. Reptile cold. Amphibian cold. They fitted with the dampness, the gloom, the water and the mushrooms. Probably there wasn't a homoiothermic, a warm-blooded creature on the planet. Advanced, surely. Intelligent, no doubt of it. But not warm.

After a few minutes I found I could move again. Experimentally I wiggled my fingers and toes. Then I cleared my throat and tried my voice.

"You've made your point," I told them. "I'll be good. But it would be nice to know what you expect me to do. I'm not very helpful lying here flat on my back."

They chirped and warbled and spread their thin-lipped mouths in ways that were certainly friendly, but otherwise not very informative. Again I resorted to Pegleg.

"Any clues as to what they have in mind? Also, what time is it? We must have been out for a while."

"You won't find your watch," Pegleg informed me. "In fact, you won't find anything but your basic garments. We've been collected, as

neatly as Jim Peters ever collected anything. How long we were snoozing is hard to guess. I've been awake at least a half hour, maybe more. They had no frame of reference as to how much sleepy stuff to give us, and they probably overdid it. You're bigger, so I'd guess you got more than I did."

I shifted on the comfortable couch, rolled over so I could get a view of whatever there was to see. My attendants didn't object, so long as I stayed down. But they watched me carefully with those large, slightly protruding, gold-flecked eyes. I raised myself up on an elbow.

Pegleg lay on a couch maybe thirty feet away. It was a neat rustic structure, the frame made of tree branches with the bark on, the bed itself a thick mattress. Pegleg also was propped up on an elbow. He grinned at me.

"Better than being in a cage or chained to a tree," he said. "This ought to be as restful a captivity as we've ever experienced."

"It could get old," I said. "I've had my night's rest. I'm ready to be up and doing."

"As soon as you figure out how and what. I know." Pegleg was serious now.

Our surroundings were visible, and it was easy to see why. The glowing lanternlike globes were everywhere, swinging from the low branches of small trees. The impression of being in an open space, a glade among the forest giants, was accurate enough. There was sky overhead, with a pale, unfamiliar pattern of stars.

The couches were set up in the open. They could have been built there, just for this purpose and to our dimensions. Certainly they fitted. But they may have come from the houses scattered about. That's right. Houses.

These hadn't been constructed according to any of the accepted procedures that come to mind, but they had taken some doing. They were, in effect, sections of trunks of the giant forest trees, lying prone and neatly sawed across. These had apparently been rolled into the random pattern we could see, then firmly blocked into place with great wooden wedges. The embellishments and openings in each section made them look like nothing so much as giant bird houses, ready to be hung in some gargantuan garden.

"The little ladies seem to be all there are," I remarked. "You haven't, by chance, seen any gentlemen around?"

"Nary a sign," Pegleg said. "Would you buy the idea that there aren't any? Every lady is exactly like every other lady. What does that mean, O wise ecologist?"

"It means, among other things,

that there are limits to my wisdom. But it doesn't tell me, yet, that there are no males."

Pegleg shifted on his couch, and his four attendants came alert.

"Relax," he told them, "I'm not going anywhere. —Look, Roscoe, if there are menfolks they are away at the office, or herding sheep, or something. Seems unlikely that they'd all be gone. And the girls do whatever needs doing. I don't think they depend on anybody for anything."

"All true," I admitted. "Just the same, I think there are males. Look at them. Mother Nature wouldn't waste that sort of superstructure. The probabilities of their looking like that by chance couldn't be calculated by the *Stardust's* master computer."

"No babies," Pegleg said. "No teen-agers. Yet this is a stable community. Those houses weren't set up overnight. I'm guessing that they were hollowed out, probably by machinery. And the sections themselves look sawed."

"If I show you a colony of males, set up the same way, will you believe it?"

"I don't even believe you can get up off that couch to show me anything. We got problems more immediate than these creatures reproductive procedures, remember? We've got to get our stuff back and get out of here!"

"Sorry," I apologized. "It's my scientific zeal. I get carried away. Let's hope we can escape and learn at the same time."

"If there has to be a choice, though," Pegleg said, "I know which I'll take."

All this chit-chat was of intense interest to our decorative captors. In addition to the four guards we each had, there must have been at least thirty more. They had been scurrying back and forth across the open spaces, going in and out of the oddly swinging doors of the houses, minding their own businesses in their own way. But when we began to talk they all crowded around to listen. And they commented to each other in clear high chirping voices.

"I wonder," I said, "if they plan to feed us. And if so, what. For some reason my appetite seems to be remarkably sharp."

"We had just begun lunch," Pegleg remembered. "I hadn't had more than a couple of bites. It was a good beef sandwich, too."

"You'll get no beef here. But let's bring up the subject, anyhow. It's of general concern. Everything eats. Best possible channel to establish communication."

I waved my arms. If I hadn't already had their attention, that would have done it. Everybody in my neighborhood dropped back a couple of steps, and the guard with

the squeeze bag of happy dust held it out at ready. I opened my mouth and pointed in.

"Food," I said. "Eat. J'ai faime."

"That's right," Pegleg encouraged. "Confuse 'em. If they don't understand English, try French. Maybe one of them was educated in a finishing school."

In spite of the commentary, they got it right away. One stood before me, made chewing motions with her thin-lipped mouth, and voiced a high enquiring note.

I chewed right back.

"Right," I said. "Food. Nourishment. Sustenance."

Several of them left the group at a graceful run.

"Better service than we'd get at some better known places," Pegleg said. "I hope you ordered for two."

They were back in a few minutes. Each carried a long narrow wooden salver. The food had been prepared, but naturally, not cooked. Each salver held something different. The pile of chopped pulpy material on one was obviously mushroom. On another, a long many-legged arthropod had been split lengthwise, like a lobster, and covered with a reddish sauce. Another — but you get the idea.

"Roscoe," Pegleg protested, "we can't eat this gook."

"I never intended to," I said. "They've got to realize that the only thing we can eat is our own food. We were eating when they knocked us out. Undoubtedly they saved everything. Maybe, just maybe, they'll bring the packsacks. How do you pantomime a packsack?"

"You're doing just dandy all by yourself," drawled Pegleg. "I wouldn't dream of butting in."

I waved away the food trays. The shapely waitresses looked puzzled, undecided. I tried to clarify. Again I made the chewing motions, pointed first to the food and then to them. I nodded and smiled.

"You girls can eat that junk," Pegleg interpreted.

I pointed to the food again, then to Pegleg and myself. I shrank back onto the bed, folded my hands and looked doleful.

"But we can't" Pegleg said. "Beautiful!"

Our bodyguards kept their eyes on us, but the rest of the group got together and conferred. They twittered and chirped and warbled, everybody trying to get a word in, long graceful fingers flying. There seemed to be two schools of thought on something.

"Some of them want to give us our belongings, other think it would be risky. Is that what you're hearing, Pegleg?".

"How can you keep pets if you don't feed 'em?" Pegleg agreed. "I do believe our side's winning, too."

After more debate, four of the beings set off down the glade at the run they seemed to prefer. A very long log section at the edge of the colony constituted a house of considerable size. That's where our packsacks were. A few minutes later they brought them out, two girls carrying each packsack. They even had our equipment belts.

"Let's not be interested in anything but food," I warned. "It's pretty sure they've examined everything carefully, but I doubt if they have more than a monkey's notion of what the other stuff is for. They'll be suspicious, though."

"I don't sell the ladies short," said Pegleg. "Still, by now there must be scoutboats cruising in a wide area over the jungle. Once we contact them, I'll be easier in my mind."

"Eat first. If we don't pay too much attention to the belts, they may relax. Unfortunately we can't counter that knockout dust they have, and we can't even guess how they put us away in the first place."

They knew which pack belonged to whom. When they brought mine over, I could see we had another problem, for I didn't propose to eat lying down. Very slowly and gingerly I swung my legs off the bed. The guard with the dust pouch started forward. I held up both hands, palms out, placatingly, staring into her gold-flecked eyes. Very deliberately I sat up, then bent over to thrust my hands into the open pack. Nobody zapped me. I drew a sign of relief.

I came up with a sandwich and my milk flask, and the way I dug in wasn't entirely acting. I realized that I was famished. Pegleg followed my lead. He was sitting on the side of his bed, devouring his food in big bites.

"Look overhead, Roscoe. The sky is getting pale. It's almost morning, pal. We've been bye-bye for half a day and a whole night. No wonder we're hungry."

"The scoutboats will be buzzing," I said. "I'll bet Pete hasn't had the rest we have."

"*Nobody's* had the rest we have," Pegleg said. "I never thought I'd grumble about something like that."

I groped for another sandwich. We had only expected to be out for a couple of days, but there was plenty of fresh stuff, plus some highly concentrated emergency rations. Those our hostesses probably didn't recognize as edible. There was something else, too, and I chuckled as my fingertips recognized them. My cigars! I like one occasionally, after a camp meal. And I had an idea. I'd show the ladies I could puff smoke as well as they could. I laid one out, and my tiny flame maker beside it. Then I went on eating.

"Shall I try my communicator switch?" Pegleg asked. "The belt's practically lying on my feet."

"Let me create a diversion, then flip it. Wait 'till I'm ready."

I swallowed the last of my milk, picked up the cigar and bit the end off of it. The watchers probably thought I was going to eat it. Very casually I raised the lighter, flicked on the almost invisible blue flame. I drew deeply. The end of the cigar glowed red. I turned toward my guard with the paralyzing dust and puffed out a cloud of fragrant blue smoke.

The girls nearest me gave clear warbling calls of astonishment, and then I had everybody's attention. Out of the corner of my eye I saw Pegleg bend and flip the communicator switch. For the next few minutes things were just a little bit confusing. It had been bad judgment to puff smoke directly at the girl with the dust blower. Her reaction was, I suppose, natural and predictable. She puffed back. I called myself names for being so stupid, but then I realized an interesting fact. I wasn't paralyzed! The little cloud of yellow dust dissipated slowly, and I still had all my faculties.

Pegleg's communicator rasped and cleared its throat.

"Dr. Kissinger! Dr. Kissinger! Pete Watts calling Dr. Kissinger! Come in! Come in, please!"

The watchers turned toward the strange new voice. Pegleg sat innocently, staring at me. I puffed smoke, and the wide eyes of my guard with the duster grew wider still.

"Williams here, Pete. Dr. Kissinger is in conference. Try to slap a pinpoint on our location and get some scoutboats here pronto. Don't try to do it all yourself. There's a break in the jungle. You might be able to come down. I won't try to detail the mess we're in. Nobody would believe it anyhow."

"Whew!" Pete's relief sounded big and real. "Glad to hear you! Dr. Rasmussen is about ready to turn out the ship, and Dr. Peterson is stewing. She says she knows why the air makes people funny and that you should be wearing breathing filters. Don't get closer to fungi than you can help. The spores are paralytic, hallucinogenic, and several other big words. Depends on which you breathe in quantity. Wear cloths over your faces. That'll help some."

Pegleg still seemed to be talking to me. He had that contented half-smile on his face, always his response to action.

"You are a real chatterbox, Pete. We had a good night's sleep, a tasty breakfast, and Roscoe is sitting on the next bed from mine, puffing on a big fat cigar. What we

haven't got is transportation out of here. See if you can't arrange that real quick."

Pete got the message.

"Roger, Dr. Williams! Keep your switch open — and look for us! Out!"

"Good boy!" Pegleg said. "A lesser man would have wanted an explanation. I saw her dust you. How come you can still move?"

I drew gently on my cigar and let the smoke drift in and out of my nostrils.

"There's only one thing different," I said. "This! There are several alkaloids in this smoke. One, or more, is counteracting the dust. Which isn't dust. It's mold spores, puffball spores, mushroom spores, or more likely a mixture. You heard what Lindy has found. Somehow, these beings have developed a whole system of use of fungus derivatives on living things. A drug culture, no less. They may have dozens of combinations of spores. So you sit tight. I'm coming over to you with another cigar. Don't give them any excuse to dust you. I don't want a catatonic on my hands."

"And I don't want you to have one. Move slowly and keep those nicotine clouds rolling. It's an offensive they can understand."

I rose almost casually, looked around the crowding circle of wide-opened houris. It seemed unbelievable that they had cold blood. The expressions on their flat faces were more puzzled than angry. For the moment, at least, they didn't know what to do next.

I strode carefully over to Pegleg, smoke trailing. His bodyguards drew back, but one held up her duster. I puffed a cloud into Pegleg's face and handed him a couple of cigars and the lighter.

"Here, make your own. And keep the spare handy. We've got them off balance for the moment, but they'll think of something. When they do I want my communicator and laser gun in place and my packsack on my back. The scoutboats may have trouble zeroing in with all this greenery."

Pegleg lit up. He looked around at his baffled captors and smiled his sour smile. Then he smugly raised his hand and thumbed his nose in all directions.

"Never thought I'd make such a gesture at a lady, but these haven't been too ladylike. That's a shame, too. They do look like the answers to a lonesome man's dream."

"They also look like something else, and I can't quite think what. I suppose you noticed that they've got mighty cold hands."

Pegleg nodded, a little sadly, I thought. His fantasies of extra-terrestrial beauties had blown up in his face once more.

"I noticed," he said. "And somehow I doubt the warm hearts that are supposed to go with them. Better get your belt and pack on. I think they are getting an idea."

Our shapely captors had drawn away from us. They clustered in several animated groups, chattering away in their pleasing fluting warbling speech. They looked often in our direction, and it was plain that they were speculating on what to do about us. I got back to my equipment in a hurry. No one tried to prevent me or to run away with anything. Apparently they had another plan.

The groups broke up. Most of the beings ran for the edge of the glade. Others took up stations in front of the houses and watched us as we strapped on belts, checked our lasers and swung our packs into place. I flipped my communicator switch, already set to the scoutboat's frequency. I got only a soft hum. Pete wasn't within range for transmitting, but I added my signal to Pegleg's. Our boat would be back, with reinforcements. Our job was just to see that nothing happened in the interim.

That turned out to be quite a chore.

The stars overhead had paled and vanished as the morning sky grew lighter. The glade was bigger than it had looked in the strange lantern light. Scoutboats could come down without trouble, with plenty of room to cruise low.

"Oh, oh!" Pegleg said. "I thought this was too easy. End of the clearing, Roscoe."

They were advancing slowly, with mincing steps, incredibly huge and awesome. The great armored heads, the gaping mouths shod with clusters of curved flesh-tearing teeth, the alert, red reptilian eyes — here were no doped creatures. They were fully awake — and formidable. They were under control, though. Twenty feet above the ground, on each pair of giant shoulders, sat one of our recent captors.

"Without wasting too much of my time, will you fill me in on what etiquette calls for, in a case of this kind?" Pegleg looked happier than he had since we left the *Stardust.*

"I think we're going to have to make it up as we go along. First thing is to get back in the tall timber. We can't play tag with them out here in the open."

Neither of us had even drawn his laser. We weren't alarmed. We knew we could burn down even the huge beasts of the approaching line, could at least keep them away from us until the scoutboats found us. But we wanted to observe, to learn. That, after all, was our mission in the galaxy. We could defend ourselves in life-threatening situations, but otherwise we were

bound not to destroy. The prime rule by which we operate, the basic edict of the International Space Council, is plainly stated: *No interference with the activities of an aware species.* Naturally, we were making a practical exception to the rule. We didn't plan to be captured again.

There was a further complication even to that. We retreated across the glade, trying to move at the same rate as the advancing line of reptiles. The beings at the houses did not interfere. They simply watched. Apparently we were being driven out. At least, no attempts were being made to catch us so long as we puffed on our shortening cigars. Then came the complication.

High, clear and sweet the call came, and it came from high in the jungle trees at the glade edge we were approaching. I had forgotten the calls, even though they were the reason we were here. And hearing it again, we realized that we had found what we were looking for.

That was promptly confirmed as the call was answered. The girls urged their huge mounts forward, shrilling highpitched duplicates of the tree call. But theirs was not quite the same cry. More feminine, I would have said. More ladylike.

We speeded up our retreat. From a rapid walk we broke into a jog, watching over our shoulders. But they weren't trying to catch us. We were being driven.

We ran past the first of the giant tree trunks and on into the gloom of the dense jungle.

"Heads up, Pegleg," I warned. "Whatever is overhead isn't just going to be singing songs from now on. With all that scaly cavalry behind us and the unknown up there in the leaves, we have the beginnings of a problem."

Pegleg chuckled and puffed smoke. He was enjoying himself.

"Nicely put. Conservative, too. I'll remind you of one more thing. We'll have to stay around the clearing, because that's the only place the scoutboats can pick us up. We can't go back to the water's edge because we don't know where it is. No telling how far they brought us after we went bye-bye."

I think we could have dodged and hidden from the dinosaurs, but we knew it would be a simple matter to keep up with us from the canopy overhead. Whatever the arboreal beings were, and I thought I knew, they were in touch with our former captors. We ran at angles to our previous direction, ducking from tree to tree, and most of the big reptiles went by. But not for long. The fluting cry came from above again. The girls turned their mounts and scattered in all directions, searching.

We bought a little time by lying

flat between two roots of a jungle giant. We might have got away with it, but the beings above took charge. Clouds of yellow spores began to drift down all around us. We puffed furiously on our cigars. That made us conspicuous, but it did still seem to work. We weren't affected immediately, so far as we could tell.

"This can't go on, Roscoe. We'd better show some muscle, make them respect us."

Pegleg drew his laser gun, adjusted it. Of all the atomic energy devices we use, our hand lasers are the most versatile. They can be adjusted for distance, for intensity and for extent of coverage. With them we can destroy large life, cut stone and metal, provide gentle heat. In this emergency Pegleg had another idea.

"Let's clean up the air a mite. Just remind them that we like our breathing as unpolluted as possible."

He held out the gun, pressed the stud. A wide flaring cone of light, multicolored, wavered around us as he swung the gun's muzzle. Myriads of tiny sparkles showed where each mold spore disappeared in a minuscule flash. The diffuse energy removed every organic particle from the atmosphere within a ten-foot radius of where we stood; yet nothing beyond that limited area was affected at all. At least, not physically. But it did make a spectacular display, and we got an unexpected bonus.

A big tyrannosaur, red eyes and long tusks gleaming, came striding around one of the giant trees just as Pegleg began his pyrotechnics. The huge beast was far out of the energy cone. It wasn't harmed. Its primitive nervous system did not allow it to panic. Instead, it rolled to a ponderous stop and sat staring stupidly.

Not so its rider. Her wailing cry was one of terror, and her frantic reaction filled in the recognition gap for me. The nagging familiarity of these beings was identified in my thinking. Suddenly I knew the evolution ladder they had climbed. I knew what they were.

The girl leaped from the shoulder of the dinosaur, arms and legs spread, a graceful soaring jump. She landed against the big tree trunk and clung. Her slender fingers and amazingly long toes fitted themselves with natural ease to the ridges and knobs of the rough bark. She climbed upward with the sure confidence and the swift abandon of a tree frog. In a few seconds she was high above us, approaching the concealment of the jungle canopy. And another being flashed into view from the leaves, bigger, more muscular, *male.*

We didn't need his clear,

far-carrying, fluting call to tell us what he was. And I didn't need the sight of his swelling throat, a blown-up resonating chamber the size of a soccer ball, to verify that he was the same species as she. He clung and looked down on us with no expression at all on his flat face, while she vanished from sight.

"Fancy that, now." Pegleg cut off his energy cone, but he kept a wary eye on the tyrannosaur. "They do have boy friends, and the boy friends make the calls. And live in the treetops, while the ladies live on the ground. I suppose you've got this all figured out, Roscoe."

"Partially," I said. "Partially. Remind me some quiet afternoon and I'll tell you all I know. Right now we'd better decide on the next step, before old Red Eyes over there starts doing his own thinking."

The dinosaur was beginning to show signs of doing just that. It rose slowly on the thick hind legs and stood swinging its massive head back and forth. Its long black tongue began to dart out.

Like many things I have done in emergencies, my next move came to me out of nowhere. I don't know why I thought of it. Perhaps it was the sight of the polished stick the rider had dropped when she leaped for the tree trunk. It was a slender club three feet long, and every girl rider had had one.

"Show him some more fireworks, Pegleg, and get ready to follow me. This will add to your after-dinner stories, if you ever get a chance to tell it."

The cone of light flared out. The tyrannosaur shuddered and sank to its haunches again.

"Let's go!" I said tensely. "Anything she can do, we can do!"

I darted forward practically under the belly of the big lizard, picked up the club, then ran for the long muscular tail that partially propped it as it sat. I had no idea how the girl had mounted it, but we had no choice. We clambered up the scaly hide, clinging to the knobs of the backbone. Before its slow comprehension could function, we each were seated on a shoulder.

I clubbed it along its armored jaw as I had seen the girls do.

"Get moving, Kala Nag!" I ordered. "Let's get out into the open where the air is better. Up!"

I was betting on the limited intelligence of the beast and on the sequence of familiar stimuli. And I was hoping that whatever tranquilizing substance it had been given would hold out a while longer.

Well, we won the bet, at least to begin with. Slowly, uneasily, the huge creature rose to its three-toed hind feet and began to stride. It carried its smaller forelimbs against it chest. Tentatively, now and then it would reach up toward

its shoulder. Each time, I rapped its clawed knuckles with the club. It settled to a more confident pace, and we swayed along, twenty feet above the ground, on the most unlikely mount of two lifetimes of riding.

"I've got a feeling he wasn't trained to carry double," Pegleg said. "Probably a one-woman lizard. Sooner or later he's going to decide we're one too many."

"We'll keep him occupied. It's not his function to decide things. He isn't equipped for it, anyhow."

I haven't mentioned it, but our section of the jungle was a busy place about then. There had been at least a dozen dinosaurs in the driving party. They were still all there. Their riders' cries, clear and flutelike, expressed their astonishment when they saw that we had joined them. Actually, there must have been a lot of discussion going on, for the calls came continuously from overhead as well.

I suspected that the great beasts were becoming disturbed, confused. After all, they were killers, flesh eaters, the mightiest carnivores we had seen on thirty worlds. The girls clubbed them vigorously. They clashed their great tusked jaws and moaned. On all sides of us the heavy reptile musk rose rank and nauseating.

Our communicators gave simultaneous rasps. Pete Watts' voice came clearly from the speakers, as pleasant a sound as I had heard for years.

"Dr. Kissinger! Scoutboat to Dr. Kissinger! We've found the clearing. Where are you?"

I was beginning to wonder that myself. I thought I had turned our mount in the direction of the glade, but I wasn't too sure. Then I realized that the girls were leaving us, veering off slightly from our course. I clubbed our beast on the snout to change him and followed them.

"Kissinger to scoutboat. We read you. We're in the jungle, but we're nearby. Cruise low and wait for us."

"Roger."

The communicators hummed for a moment; then Pete's voice leaped out of them again.

"Dr. Kissinger! Item of information! Tyrannosaurs and riders are coming into the clearing in numbers. Look alert. We'll scatter them with sound when you're ready."

I winked at Pegleg.

"Thanks, Pete. Don't bother. We're riding one. Trail your ladder and cruise slowly. Watch for us."

We could hear the pilot catch his breath. Then he gave a long, resigned sigh.

"You're — *riding* — one? Roger, gentlemen! Standing by!"

Pete's used to us, and he's hard

to surprise any more. But I think that shook him a bit.

Our surroundings became lighter. Beyond, we could see the glade, just beginning to be touched by morning sun. Our beast was the last from under the big trees. The others had swung around and formed a line once more. I realized that they had some sort of plan for us, even though we were riding one of their lizards. What it was we'll never know. Pete's scoutboat glided down into the glade, ladder trailing, and for the first time they saw it.

The line broke. The high trilling calls were taken up by the beings in and around the houses. Those outside scurried for shelter. And all the while they kept up the incessant high cacophony of sound.

"Sounds like a blinking frog pond," Pegleg said.

"Exactly," I said.

He looked at me queerly.

"You mean something by that, don't you?"

"The cold hands. The swelling throats. Sucker disks on the fingers. Tiny webs between the toes. Those calls. Think it over."

The communicators cleared their throats.

"Scoutboat to dinosaur. I see you, Dr. Kissinger. What do I do?"

I had to chuckle. You don't keep Pete off balance for long.

"Cut to pickup speed and approach us from the rear, Pete. This varmint is getting restive. Trail the end of the ladder on a level with his head. Dr. Williams will go first."

I kept the tyrannosaur moving while Pete circled behind us and started his glide. Pegleg drew up his legs and steadied himself with a hand on my shoulder. The ladder came by lazily. Pegleg grasped it. The dinosaur ducked as the body swung past its eyes, then made a quick snatch with a clawed forelimb. It missed, but not by much. I clubbed its knuckles. It clashed its great jaws and moaned. Whatever it was that the ladies gave those things to make them docile enough to ride was definitely losing its effect.

I watched Pegleg clamber swiftly up the ladder and disappear into the hatch. High above tree level two other scoutboats swept in slow circles. They hadn't been needed, but they were there.

"One aboard, one to go, Dr. Kissinger. Here we come!"

I was ready. Suddenly I had had enough dinosaur riding to last me for a while. I clubbed the beast along its jaw to keep it moving steadily ahead. As the ladder approached, I rose on its shoulder, reached for the rungs, and pushed off hard from the top of the fearsome head. Then I was past, swinging free, leaving behind one

baffled, puzzled big lizard. I gestured good-by, not politely, then climbed up and into the hatch.

Pegleg grinned at me from the observer's seat. He was lighting a fresh cigar, the second one I'd given him. Only then did I realize that I had the cold stub of mine still clinched between my teeth. I spat it out with disgust.

"From the Mesozoic to the age of Ultraspan in one easy step. There's something to be said for technology, Roscoe."

The pilot was looking at us both as though he didn't believe us.

"Take us home, Pete. Sorry to have kept you up."

Pete's fingers pushed buttons and the scoutboat climbed. He shook his head.

"I've picked you up off cliffs, off mountaintops, off wavetops, and off islands, Dr. Kissinger, but this has to be a first. See to it that I'm there when you tell about it, will you, please? I think I've earned it."

"You have, you have!" I agreed. "You'll be sitting in the front row, I promise you."

If the basic function of the *Stardust* included detailed investigation rather than exploration and discovery, we'd have many more answers than we do. From every planet on which we've found life, we have departed with a sense of frustration. There's always so much more to know. But to learn it is not our job. Always the galaxy beckons. From any situation we're always looking on, looking out. Who can imagine what the next landfall will bring?

So the aware beings of what Lindy called Mushroom World could claim only their share of our time. In the month that was their allotment we learned many facts, but the "whys" were harder to come by. What we did learn is all detailed in the complete set of records in the files of the International Space Council. (*ISC Annals. Vol. 92. The Log of the Stardust. A.D. 2126*)

We sat and talked it all over, Lindy and Pegleg and I, sat high on a jumper platform extruded from the *Stardust's* metallic hide. It had become almost a ritual with us, on this last afternoon of the last day on a planet. Sometimes we regretted leaving. Sometimes we were glad to go. As we looked toward the reddening westering sun of Mushroom World, I think we were both. We mixed sense and nonsense, looking back on a month of strenuous effort, looking forward, as always, to what lay out there in the unknown.

"So the ladies here have the technology, the know-how and the culture, while the males are still primitive," Pegleg mused. "Funny,

that's what they've been contending on Earth all these many centuries."

"But here they can prove it," I said.

Lindy giggled delightedly.

"It all depends on what would be accepted as proof," she said. "A pretty good case might be made on Earth, too."

"My problem is still the same," Pegleg said sadly. "Cold women. It would be me who would find them at their peak of development."

"Here," I pointed out, "they've never been anything else. Like it or not, Pegleg, the shapely ladies are amphibian. The swarming tadpoles around the piers are their babies. Probably not one in a million survives to metamorphose into a green-clad lady or a singing, calling, tree-climbing male."

"And the piers are not piers at all," Lindy reminded. "And they're not roadways. They're spawning places. When the ladies drift in the warm water, whole groups of them clinging to the pier, they are not just swimming, you know."

Pegleg looked sheepish, though not exactly crushed.

"Their intelligence is a happenso, probably, but it's no less real for that," I said. "By some genetic squiggle they've leaped ahead in brain power, outstripping the reptiles, becoming able to relate cause and effect. They interact with each other better than we do. Would you say that that makes them more civilized?"

"An outmoded word," Pegleg said.

"They're genuine scientists, of a sort," Lindy said seriously. "I've only been able to get a dim idea of the extent of what they know. They've harnessed the chemistry of the fungi. They probably use those spore combinations in ways we can't imagine. When they learned to ride the tyrannosaurs, they accomplished something we wouldn't even try."

"They have such expressive eyes," Pegleg mourned. "And that hair! Gorgeous!"

"There's nothing finer than frog hair," I said gravely, "and you can see the same expressive eyes down in Jim Peters' tanks."

"Don't be unkind, Roscoe," Lindy's solicitude was somewhat short of genuine. "He's sad."

"Hah!" I snorted. "They may even use what they know to *keep* their own males primitive. Those are the best kind, I hear."

"I will not comment," Lindy said, "but if I wanted to, I could."

I put my arm around her beautiful shoulders. For once, my rude features and hulking body seemed to illustrate the point.

"You have the best of two worlds," I told her. "And so have I!"

Books

AVRAM DAVIDSON

A Midsummer Tempest by Poul Anderson, Doubleday, $5.95

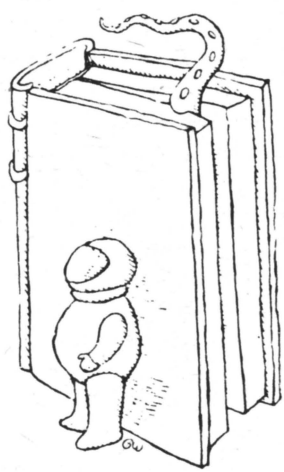
When Women Rule, Sam Moskowitz, ed., Walker, $5.95

The Dream Millenium by James White, Ballantine, $1.25

Relatives by Geo. Alec Effinger, Harper, $6.95

With *A Midsummer Tempest* the Olde Lore-Master is back again, with a story of Sword, Sorcery, Religion, Literature, and Love — plus an interesting novelty, some bits of industrialization. The time is (mainly) that of the English Civil Wars (the 1640s, for the benefit of beneficiaries of meaningful/relevant educations). One may think it difficult to pack or even fit all this into that era; Anderson does it by making it an alternate universes tale. Suppose, for instance, the steam engine, instead of being the toy it actually then was, had been developed, and the Industrial Revolution had gotten more than a century's headstart... and amongst the very class it did eventually most promote — the English Nonconformists. That is, Protestants not of the Church of England. That is, in the 1600s, Puritans. The steam engine and the Rings of Power have not, I think, ever met in one book before.

The hero of *Tempest* is Prince Rupert "of the Rhine," archetypal Stuart, nephew and general to Charles I. Historical glamor has been kinder to him than those closer to him sometimes were; his proposal to colonize Madagascar was called by his mother, "another one of Rupert's cracked-brain schemes." In our universe he died in middle-age of syphilis; ironically



his name survives in the Canadian Anglican Diocese of Rupert's Land.

Tempest is based upon a rather rich notion of an England in which Shakespeare is *the* "great Historian" and is perhaps not without precedent; after all, many great minds of Greece and Rome accepted Homer as *the* "great Geographer." Having had, then, this Great and Good Idea, that *every*thing in Shakespeare is *true history* — from the Seacoast of Bohemia to Titania and Oberon in Athens — Anderson procedes to slather the cake with icing: and, alas, icing of thinner quality by far than the cake. Rattling good adventure yarn, for them as likes their yarns to rattle. Good cover by Tim Lewis.

As Science Fiction has always been the Literature of the Future, it should be no surprise that it had something to say about The Feminist Movement, formerly "Women's Lib," long decades before the names were coined. Contributors to *When Women Rule* range from Herodotus through Booth Tarkington to David H. Keller and Nelson Bond, and are, for by far the most part, of purely historical interest ... unless, of course, you still retain the old Sense of Wonder as it obtained in, say, the 1920s. Even so, you may not wonder that Cervantes felt that burning was good enough for an absolutely awful Romance of Chivalry called "Sergas of Esplandian," chunks of which are here as "The Queen of California" (yes, the origin of the name!). You may feel that Tarkington should have done a sequel to "Alice Adams" instead of "The Veiled Feminists of Atlantis." You may sigh at seeing such as-yet-unfulfilled prophecies as George Allan England's in the story "June 6, 2016."

> ...They both slipped dishes and refuse into the conveyor ... to be whisked away to the reduction plant (where) all waste products were converted into producer gas, to run gas-engines for electric-lighting machinery. The old-time waste of New York's refuse, by dumping it into the sea — incidentally contaminating the harbor — had long since given place to this better method.

And this one:

> People ... no more ... thought of standing in a public conveyance than they ... thought of paying. (...) The barbarism of overcrowding and the graft of exacting payment for this service of prime necessity had become ... extinct ...

Sigh

I read Wallace West's "The Last Man" as a child; it ain't great stuff, but seems to stand up better than most, with its images of The Last Man and his new-found equal,

The Last (sexed) Woman, concealed in black robes and slinking desperately through the throngs of vat-produced neuter-worker-women bent on the destruction of all "avatars"; while the great and dying sun of the latter days sinks somberly in the sullen sky. Cover is by James E. Barry, and there is an exhaustive Introductory Essay by editor SaM.

Half-way through James White's *The Dream Millenium* I pencilled, as notes for my review, "*Good, clean, crisp, effective space-ship science fiction, with interesting flashbacks to the Earth(s) they left behind them.*" After that it got a bit slowed and talky and I grumbled to me. Then it picked up and got under full speed, and gradually I appreciated that the "flashbacks" were of considerably more importance than I'd thought. That the book was not only "space-ship science fiction" (mind you, a fully respectable category, to say the least) but also had important and not illogical things to say, of a sociological nature, which tied in well with the world we daily live in. And that, to my surprise, and to my gratification, it was a much, much better book than I had felt I had any reason to expect ... in view of Sturgeon's Law and a few other things.

If I tell you that the book is about a ship bound outward on a thousand-year-maximum trip to colonize Wherever Is Best, and that the humans are mostly in a state of "cold sleep," a sort of suspended animation from which they awaken for brief times at long intervals—if I tell you this, *don't* merely sigh and shake your head and make a mental note to pass it over. Don't. It is much better than I thought and probably better than you, too, may think. So buy it and read it. (As I read it in proofs, I cannot follow my custom of mentioning the cover artist.)

The back-cover-inside-flap (I hope someone will tell me a better term than this)-blurb for *Relatives* says:

> George Alec Effinger is a young man of frightening talents. His style of writing brings to mind Pynchon, Barthelme, Borges, but finally emerges as wonderfully his own. He has had stories published in science fiction magazines and in the best of the original anthologies. His first novel, *What Entropy Means To Me*, published in 1972, was critically acclaimed and Effinger was hailed as a strong, new talent. *Relatives* can only add to his growing reputation.

Well, no author ought to be held to what blurb writers say — one of whom pictured me as fearful of poisonous snakes in a foreign city which has as many poisonous

snakes as N.Y. City has wolves. I *would* say, and I *will* say, that GAE is one of the best writers alive and writing. I make this assessment on the basis of two or three short stories.

"Pynchon, Barthleme, Borges" may, on the basis of *Relatives*, be recalled to the blurb writer: not to me. This book conjures up to me: Paul Bowles, Gerald Kersh, and Frederick Prokosch—if all of them had written bad books—and a very mystifying best-seller of a decade ago: *The Cook*, by Harry Kellerman (I thought it was written by Christopher Cerf, who denied it). Because *Relatives* is, in my opinion, my painful opinion, just that. A Very Bad Book. And I don't know how GEA *could*—

Again, we have parallel or alternate universes (and, again, a perfectly respectable category, to say the least) involving the parallel lives of a man alternately called Ernest Weinraub, Ernst Weinraub, and Ernst Weintraub. None of the three universes is ours. In one, the E.T. lives in a "Jerman Ostamerika" of the 20s and 30s; in another he lives in an inhumanly overcrowded American city of about this present date; and in the third he is drinking his life away in the only city of Africa—no given date.

All three lives are told in dull, grey, gritty, grooly prose. Are they *meant* to be? This is astonishing, astonishing. How *can* Effinger have meant this seriously? And if it is a take-off, to what end? Is it a satire on Communism disguised perhaps as a satire on *Anti*-Communism? But why try building the Tower of Babel out of bird-turds? Take a stock-pile spy novel, a stock-pile alternate universe novel, and a stock-pile Drunken White Man in Exile novel, turned all askew (as though on unfathomable editorial orders), and mixed ill— NoNO. There must be more to it than this. That *Relatives* might represent the "Real" Geo. Alec Effinger and that the gorgeous short stories are mere

flukes, is too horrible to consider. Also —

Why is the White book so much better than the Effinger? Is it because White, a simple yeoman writer (as we have thought), simply set out to write the most interesting and best-written story that James White could write? — and that Effinger, a brilliant and innovative writer (as we have thought), set out to write the dullest and worst-written story that Geo. Alec Effinger could write? Does this last make sense? Did he, did GAE, do it out of deep disdain, disgust, and contempt for the sort of thing he was satirizing (if he *was* satirizing)? It is not worth it, whatever the reason, it is not anyway worth it. For not only is the book glum, gloomy, dumb, doomy — worst by far is that not for one moment is it able to achieve a suspension of disbelief, willing or unwilling. Oh my. Too bad. Too bad.

Well .... even Homer sometimes nods. But Effinger, I think, fell clear asleep. (Cover by Freeman.)

Coming next month — KILGORE TROUT's novel "Venus on the Half-shell"

Kilgore Trout has written 117 novels and 2000 short stories, yet little is really known about him (possibly that should read, little is known about the *real* Trout), and many readers will be familiar with him only through the references in the novels of Kurt Vonnegut, Jr. To quote from Trout's "biographical sketch": "This is due to Trout's extreme reclusivity and his indifference to the publication of his stories." We will have more details about this elusive writer, along with a rare, valid photo, in next month's issue.

F&SF is proud to take a major step in the surfacing of Trout with the publication of VENUS ON THE HALF-SHELL, a profoundly insane work about the quest of Simon Wagstaff, the Space Wanderer. SW is an Earthman who never grows old, and this story records his astonishing adventures as he wanders the Universe — accompanied by a dog, an owl, a female robot and an atomic-powered electric banjo — seeking the answer to the primal question: "Why are we created only to suffer and die?"

Be on hand for the December F&SF, a landmark event in sf.

In which Mr. Sladek shares some astounding new evidence in support of ancient visitors from space. His doorbell theory alone is guaranteed to shake the foundations of the scientific establishment, and we are tempted to challenge our own Dr. Asimov to explain *that* one away, if he can!

Space Shoes of the Gods

by JOHN SLADEK

Why do so many ancient legends speak of gods who fly in flaming chariots? Why is the Great Pyramid built strong enough to withstand an H-bomb blast? What possible connection can there be between Easter Island, Stonehenge, and the messages received on my Aunt Edna's Ouija board? Orthodox scientists are unable, perhaps unwilling, to answer such daring questions.

Of course it's never easy to abandon our old misconceptions and accept fresh ideas. Scientists bitterly attacked Galileo when he proved that the Leaning Tower of Pisa was a pendulum. They pooh-poohed Darwin's revolutionary notion that mankind is descended from the beagle. They laughed themselves sick at Edison's light bulb, as they will at any brilliant idea eons ahead of its time.

My idea, for instance. I do not expect understanding from the narrow-minded men of the scientific establishment. They are too busy pottering around with test tubes in musty laboratories to listen to anything new and important. Rather, my article is directed to those young, adventurous minds that are not afraid to believe the impossible. I am in the position of the first beagle who dared to walk on his hind legs, so to speak. No doubt there was some smart beagle professor standing by, to call him a crank and a dreamer. All the same, he took that first great step.

Today we are taking another great step, a giant step from Earth[1] into the vast spaces of space. Yet how much do we really know about this universe of ours, with its dozens on dozens of galaxies, each packed with scores of literal stars?

Earthbound science has no answers. But a few far-sighted "cranks and dreamers" have ventured to say that:

a. There are certainly other civilizations in the universe *exactly like ours*, if not more so.

b. *They* are trying desperately to get in touch with us, perhaps to borrow money.

x. *They* must have landed here on Earth in the prehistoric past.

d. Wherever *They* landed, *They* were worshiped as gods by the natives. Their modern equipment, which would seem prosaic to us, must have been fearful magic for our ancestors. Imagine, for example, how the simple Egyptians might have reacted to gods carrying ballpoints, credit cards and contact lenses!

e. For some reason, the space gods wearied of all this worship and departed.

Hard to believe? Orthodox science may try to dismiss such notions with a wave of its oscilloscope. But then orthodox science still cannot explain away certain facts....

The Evidence

Last year, English miners opened a seam of coal 15 million years old. Inside, they found the clear fossil imprint of *a modern zipper.*

How could it have got there? Did an ancient space visitor with zipper pockets on his uniform fall asleep in the English jungle, never to awaken? Was he left behind by the expedition? Could he have been murdered by one of his space brothers?[2]

Conventional scientists have their own "explanation" of this strange anthracite evidence. They call it a fossil fern. But they have yet to explain what a fern was doing wearing a uniform with zipper pockets.

In the same way, conventional archaeologists have tried to explain away a remarkable cave drawing found in Blague, France. They call it "a hunter shooting game with a bow and arrow." But the hunter's bow looks astonishingly like a modern sextant, to the unprejudiced eye of this nonscientist. The drawing can only be a space navigator taking bearings on a wooly mammoth. Museums are filled with similar archaeological mistakes: stone "spearheads," which, as anyone can see, are actually stone letter-openers.

The ancient world abounds in such unexplained mysteries. How could the simple inhabitants of Easter Island have carved their enormous stone faces and heaved them into place without the aid of rock drills and bulldozers? How could gigantic pyramids have been built by the primitive cave-dwelling Egyptians? Science has not begun to unravel the mystery of the pyramids, nor even to solve the riddle of the Sphinx.

A ruined edifice in Peru bears a weird inscription: two horizontal lines crossed by two vertical lines.

In other words, the figure for tick-tack-toe, *a game played by the latest giant computers.* Likewise, the Ankara Museum displays clay tablets pierced with holes — the same holes used in modern IBM cards. Could this represent the payroll arrangements of our cosmic visitors?

Peculiar Roundnesses

The jungles of Costa Rica are littered with mysterious stone balls, some of them larger than Volkswagens. I spoke with an amateur archaeologist who is studying these curious rock spheres in connection with his search for Martin Bormann.

"I can't really understand these odd orbs," he confided. "According to a local legend, these uncanny globes fell from the sky. The native name for them translates as 'strange spheroids.' Could they be small planets from some lesser solar system? At this stage, we can't rule out anything, even the possibility that some vanished race of giants played marbles here."

Two intriguing ideas. Controversy rages on between the odd-ball planet theory and the lost-marble theory, but one question must be answered:

If these are tiny planets, what has become of their even tinier inhabitants?

The roundness theme appears again in the art of many cultures. Australian aborigines, among others, have drawn circles on pieces of wood. A ceremonial frieze of ancient Mexico, which is covered with circles, undoubtedly depicts traffic lights, ball bearings, embroidery hoops, curly hair, and many other items not rediscovered until the twentieth century.

My list could go on to include hundreds of these anachronisms, but I will end it with an object in my own collection. Not long ago I acquired a small Ingo-Sumerian statue of bronze. Purblind anthropologists would probably call it a "fertility goddess," ignoring certain features which are obvious to any child:

· On the chest of the goddess are two distinct modern doorbells.

The Legends

In the light of evidence like the above, we might re-examine some of the legends of the so-called past. Take the Nordic sagas for example. There we read of strange gods who drank from horns. Virgil, too, speaks of dreams coming through a gate of horn, while the Book of Revelation describes gates of pearl. From Shakespeare we hear the legend of the base Indian who threw away a pearl, while many Indian myths speak of peculiar gods. Can all this be coincidence? No, it is far more likely that these

myths convey primitive ideas of television, twin-tub washing machines and electric toothbrushes[3]. This is confirmed in Genesis, where we read of an angel (a technician) who guarded the gates of Eden (spaceship) with a flaming sword (soldering iron).

Finally we are confronted with the "wild" tales of the early Spanish conquistadors, who swore they found in America men with feathers growing right out of their heads! Who were these odd feather-headed strangers and what were they doing on our planet?

The Lost Galaxy

By now it must be plain that many of our space gods were tourists. In the distant past, Earth was no doubt a tourists' paradise, an unspoiled wilderness where the featherheads could get away from their own crowded galaxy. They may have built themselves a few amenities, such as the pyramid saunas of Egypt, or Stonehenge (a luxury motel), but they left most of the planet delightfully wild.

What spoiled it for them? The Deluge? The sinking of the luxury liner *Atlantis?* Whatever the reason, our cosmic tourists departed, leaving behind only a few traces: a zipper jacket in England, marbles in Costa Rica, a crumpled kleenex (now to be seen at the Stockholm Museum of Antiquities, in a wastebasket near the door).

Some uncanny tourist instinct must have told them that Earth was doomed.[4] The natives were getting too civilized. All too soon, earthlings would cover the paradise planet with highways and fuming traffic, fill its air with thundering jets carrying earthling tourists, and pack its universities with so-called professors who scoff at my theory.

The space gods have left our solar system and gone back to work. But someday — when we have finally rid this planet of evil, pollution, war, disease and skeptical scientists — then our gods will return.[5] They will bring us all the benefits of their superior civilization. They will shower us with plenty of valuable cargo.

NOTES

1. The question of giants *in* the Earth will be taken up in a later monograph.

2. Just such a space-brother murder could well account for the strange legend of Cain and Abel. I have communicated my suspicions to Scotland Yard, urging him to examine the coal deposits for fossil fingerprints. So far, they have remained ominously silent on the matter.

3. Further confirmation is provided by the certain knowledge that Shakespeare's base Indian threw his pearl *before swine.* This proves

that Shakespeare's plays were really written by Bacon, a space visitor.

4. "Tourist instinct" is an example of clairvoyance, or "knowing" that something will go wrong just before it does. I refer the reader to an interesting experiment at Earl University, where a researcher asks subjects to drop buttered toast and predict whether it will land face-down or face-up. So far, the experiment is a failure, Dr. Bormann reports. But he adds, "The interesting thing is, *I just knew it would fail.*"

5. Some doddering scientists sneer at the idea of travel between stars. The nearest star, they say, is 25 trillion miles away. They forget that monorail trains are capable of astonishing speeds (over 200 mph!). Doubtless, despite the skeptics, we'll have a regular train service to Alpha Centauri and other stars, by the end of the century.

Brian Aldiss (whose latest books are FRANKENSTEIN UNBOUND, Random House and the history of sf, BILLION YEAR SPREE, Doubleday) has been working recently in a form he calls "enigmas. These are slightly surreal escapades grouped in threesomes — a form which provides the chance for cross references and alternatives not always available in one story."

Three Songs For Enigmatic Lovers

by BRIAN W. ALDISS

A One-Man Expedition
Through Life
The Taste of Shrapnel
Forty Million Miles from the
Nearest Blonde

A ONE-MAN EXPEDITION THROUGH LIFE

Frank Krawstadt's life was as glossy as a record sleeve.

We were in Vienna, Austria, Europe, walking, and laughing about electron-density mapping methods of molecular growth. From there, the subject turned naturally to music. We had come to Vienna to finish Krawstadt's VTP, 'Frankenstein among the Arts' — his great and definitive Visual Total Presentation on current creativity — by interviewing Roskindergaard Nef, the molecular composer.

"Isn't it rather ostentatious of a Scandinavian composer to settle in the city of Mozart, Beethoven, and Haydn?" Naseem Bata asked. She was Krawstadt's and my latest lady, as glossy as he in her impeccable saris and dark svelte hair.

"Nef controls his life by computer," Krawstadt told her. "It's the coming life style. 'Leave Taby,' I imagine the speak-out said one day, 'and move to Vienna, Austria.' So Nef upped and went. Right, Mais?"

"Right," I said. The Viennese ladies were already at *jause*, consuming titanic patisserie as we walked along Graben. "It's the coming life style. Not horoscope, not I Ching, but a Tronzyme MXC 5505 All-Digit be thy guide, in the least need go by thy side. Feed it your parameters, it will have your decisions in custody. Let a discrete stochastic system run your free will..."

"I did not know Vienna, Austria, still existed until last week, if you can believe that," Naseem

said. She and I stopped to drink at an old street fountain. Krawstadt had disappeared into a jeweler's. The jet from the fountain tasted like a slightly corked 1981 Aloxe-Corton.

"They turned it into an Experimental Experience town four years ago. The work is not yet complete, but they're randomizing rapidly."

There was no need to explain life-refuge towns to Naseem, of all people. In her previous Endeavour Decade, she had been involved in the legislation which had ushered in the Serious Distinction laws in most Western countries. As a result, one could now elect to live either in Traditional Experience or Experimental Experience areas. While some of my friends — Anna Kavan was one of them — were building entirely new centers designed for one sort of experience or the other, or even for Totality, several cities bypassed by history had renewed and revised their charters so as to participate in the new roles.

"Vienna is the Capua of the mind, to quote Grillparzer," Naseem said. "Where else would the fountain water taste like a slightly corked 1981 Aloxe-Corton?"

"Cork?" I suggested.

Krawstadt emerged from the stop wearing a silver domino. His hair was still burning. "Did you say 'cork'?"

"In a sense."

"It used to be one of my favorite words. Now I prefer 'perambulation'."

As we enjoyed the luxury of being on foot, we talked of Grillparzer. All of us had recently been to Marsville to see the performance of the complete cycle of his plays. The low gravity of Mars had proved of inestimable value to the theater; indeed, very little other use had been found for it.

An old Hapsburg palace was up for sale. Roskindergaard Nef lived in a shabby-elegant mews house just behind it. When we halted before its door, snow and rose petals descended upon us. When we rang the bell, the house sank gently into the ground. A sphincter-portal widened on the peg-tiled roof and bade us enter. Inside, raging wolfhounds bore down on us, dissolving into nothingness only an inch from our skin. As yet, Experimental Experience was prone to rely heavily on farce.

Nef's workshop was plunged into the existentalist dark of a Fuseli painting. He lurked at the back, bearded, gowned, looking alchemistical, looking distracted.

"I'm Krawstadt," Krawstadt said. "Have we come at a convenient time?"

"More philosophically, have you come at a time at all?" Nef asked.

"Certainly. We've come at several times. It's 1992, it's time for a drink, and it looks as if it was time we were going."

"For you it may be all of those things," Nef said. "For me it is none of them. My real self is not even in Vienna but in Trieste, once Vienna's seaport, where I am exhibiting some of my life-music compositions."

"Who are you, then?" Naseem asked. "If that's not too personal a question."

Nef replied, "I am a stored hologram-image, entirely computer-governed; since the Tronzyme knows more about Nef than I do, you will find an exceptionally intelligent and aware Nef-simulacrum before you for interview."

Krawstadt and I looked at each other. Krawstadt nodded, and I produced my RNP rod and turned it in the direction of the simulacrum.

"What do you know of Grillparzer?" I asked, switching on the current.

"Grillparzer," said the simulacrum, "produced criticism which cloaked self-reproach in any direction provided the probability level precedes job enrichment of a multi' sided orifice in lessons deeply felt to see entomology in a groan of sand —"

It switched itself off abruptly as my randomizing numerology projector scrabbled the creature's logical processes. Then it vanished.

The lights came on in the workshop and a scent of sandalwood pervaded the air. Krawstadt led the way between benches to a door at the back labeled MOLECULAR COMPOSITIONS: Keep Out.

We were in a long room with cages down one side. A man in a lab coat came towards us, but his face was painted on, and he hung himself on a peg before reaching us. Music played, an odd mixture of Zinovieff and Camesina stucco ceilings. Grillparzer would have freckled.

The molecular compositions were kind of crazy. Nef had given most of them bright scarlet skins, making them more cheering than most groups of MCs you saw around. We let a small one out of its cage. It had two short arms, one with four spongy fingers, one with five. There was also a protuberance almost like a small head. Things like shoulder blades moved under the flesh. It felt funny to touch the human-type skin and find it cool.

"They do practically what they want with genetic sculpting these days," Naseem said. "But how do these MCs keep their metabolisms

going? They've no orifices for food or excreta."

Krawstadt was not listening. He had put two more MCs into the same sty, and they were fumbling each other.

I told her: "That's Nef's secret. The molcomps feed on their own substance. He builds them large and they dwindle as they consume themselves. The computer works on their genetic structure via musical programming. Each one of these creatures represents a different melody or part of a melody. No two entirely alike ever. If Nef were here, he could probably tell you which was molded by which tune."

"Maybe there's a whole symphony here."

We stood looking at the two fumblers. One had six tentacles growing in two groups of three and was roughly spherical. The other was long and floppy and equipped with one fingerless hand and four legs. They slowly and clumsily felt each other, fell over, fumbled again, tumbled over one another, rolled apart, went together again, groped, tirelessly felt and blundered apart and felt again.

"Looks like a slow agony!" Naseem said. "Like living things blinded and stitched into sheets."

"Have they any consciousness?" I asked Krawstadt.

"If blood without directing brain has consciousness, yes."

"Maybe it has."

"Maybe it has. You know what Nef claims each of these things represents? A one-man expedition through life!"

The two MCs moved about each other unwearingly, as if sluggishly determined to wrestle some secret from the other as they clumsily felt each other, fell over, fumbled again, tumbled over one another, rolled apart, went together again, groped, tirelessly felt and blundered apart and felt again.

"The commercial applications will be interesting," Krawstadt said.

"Great for Experimental Experience areas. Properly designed MCs can be used for furniture and pets and even vehicles."

"And children's toys," Naseem said. "You need them with varicolored skins — rainbow patterns, flower patterns. They'd be less spooky then."

"They could have bells inside them."

As we were talking, the two MCs moved ceaselessly about each other, always only on the verge of attempting some definite course of action that would bring them fully to understand the other, as they clumsily felt each other, fell over, fumbled again, tumbled over one another, rolled apart, went together again, groped, tirelessly felt and

blundered apart and felt again.

We left them to it.

"Trieste now?" I asked.

"It's another EE city; having been left behind by history, only the absurd is left."

We came out on the roof. The tiger birds were overhead, wheeling and crying among the spires. The house had risen to its full height. We called a little air taxi, sitting beneath the blimp and blowing paper butterflies down at the ladies below, still languidly eating their cakes and pastries.

It was a good day, the only sort of a good day — a wasted one.

THE TASTE OF SHRAPNEL

The paper butterfly went gliding down, fluttering to one side and another on the breeze. A tiger-bird chased it, but the butterfly swooped in through an open window and landed on Roskindergaard Nef's Tronzyme MXC 5505.

Nef lifted the frail thing, and it exploded in his hand. He clenched a palm full of blood and cried in pain.

"Put your hand in the healomat," suggested the computer.

When he returned, the blood had congealed into a little bead. Nef picked it up and put it among the wooden bricks and diamonds on a low shelf.

"Let us continue our conversation of love," he said to the computer. "I have fed you information about how much I love Branzi Maisel."

"Somewhat imprecisely."

"And I have told you that I am far too busy to have any part of my creativity occupied by any other person, however beautiful and intelligent. Right?"

"I have given my judgment on that."

"I don't want to hear it again. I repeat, there is no selfishness in my attitude, only a dedication to my art. What I want to hear is how I can resolve my dilemma."

A microsecond pause before the 5505 said, "You can eradicate Branzi Maisel. You can eradicate yourself. You can eradicate the love between you. Those are the three alternatives."

He lifted the computer and took it across to the open window. He leaned out and held the machine suspended.

"5505, it is a five-story drop to the Via Gabriele D'Annunzio. I have only to let you go, and you will be shattered to pieces."

"You know that being and no-being are one to me. Why do you attempt to threaten me?"

He stared in bafflement at the 5505. A balloonatic drifted up to the window carrying a tray. The balloonatic was a thin old man

wearing a silver domino. He said, "Like to buy a stone, sir? Or would exchange for any old computer about to be jettisoned."

Nef stared in bafflement at the tray. It contained grey and brown stones from the beach.

"I choose that one," he said, pointing at a brown stone and nearly dropping the computer.

"Very good choice," said the balloonatic. "These stones have a strange prophetic power. According to this one you have selected, many absurd things will occur. People will never be so much fun as they are now; your story is about to come to an end, but another followeth immediately. A famous explorer will arise from the negro peoples. New alternatives will open out, your sense of smell will be of inestimable value to the human race, hair will be worn at shoulder length. Butterflies will cause some disturbance in your everyday life, but fear not, for all God's creatures are going to be reunited in the Great Beyond before many more moons have passed. Your aunt's warts will go before Lent, but her sciatica will remain."

"My arms are aching. Is there any more of this nonsense?"

"Only a little more, sir," said the balloonatic, carefully wrapping the brown stone in brown tissue paper. "A love will arise so great that it will never perish, not until the last mountain tumbles, although you must beware of rain tomorow. The name D'Annunzio is important, and you should watch for possible danger from a desk. You are personally on the brink of a great invention which would completely change the world, were the world not on the brink of extinction; furthermore, dear sir, a tall woman of middle age will soon address you in terms of high approbation, but you will get little pleasure from it at first. You suffer from trying to have your cake and eating it. Character foibles apart, the world is being invaded, and you will be instrumental in causing great havoc. But as ever we shall all come up smiling and live to fight another day. God bless you, sir, and thank you."

He handed the stone over to Nef, who balanced it awkwardly on the top of the 5505.

"Rather a lot of prediction from one stone, wasn't it?"

"Well, it is a fairly large stone and, besides, this is Thursday." He rose slowly in the air until only the soles of his feet were visible.

"Unfortunately, these Experimental Experiences are prone to rely somewhat heavily on farce," Nef said dismissively, flipping the stone down in the street.

He withdrew from the window, setting the computer on his desk.

"Trust in science rather than

superstition. The irrational is so absurd. But you, you inhuman little quaint, you are unable even to fear death by dropping... How dare you contemplate the love between Branzi and me and then offer only three alternatives?"

His hand had healed, but it still itched. As he scratched it, the 5505 said, "Even in an EE area, there are only those three alternatives, human limitations being what they are."

"The human brain is greater than any computer because it is teamed to a sensation-center. I feel, therefore I am. You feel not, therefore you be or not-be with equal indifference."

"You surrender your will to me."

"Because I am a follower of von Sacher-Masoch. I love to suffer. Pain — that's the sand that makes the oyster secrete its pearl, the genius his masterpieces. Listen, 5505, let me give you another alternative away beyond your world..."

A large butterfly fluttered in the open window, its colors bright. Nef seized it as it came near. He observed that it was made of metal. There were small windows in the body. Through the small windows, he saw minute beings waving, in alarm, delight, or possibly the throes of calisthenics.

"Earth has at last been visited by the inhabitants of another planet."

"More likely, the butterfly is a terrestrial artifact."

"You are governed too much by the likely."

Nef put his nose to the butterfly and sniffed.

"Hm. Interesting. Gas... A visitor from a planet orbiting a gas giant. Interesting. We are in the presence of history."

He shut the butterfly away in a drawer of the desk.

"First things first. My love affair. My alternative. We can already project me in stored hologram-image form, motivated by you according to my behavioral parameters. If we can get a complete speak-off from Branzi's computer, then we can make a stored hologram-image of her too and program another computer to act according to her behavioral parameters. Our two images can then carry on a lengthy and delightful love affair while I pursue my lifework. Every so often, I can tee in on this circuit and get the gist of things. Isn't that a perfect idea?"

"No," said the computer. "Love is physical as well as emotional and ideal. Two stored hologram-images cannot copulate."

"True. More research needed."

There was a knock at the door and a tall woman of middle age entered. She curtsied to Nef.

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"Your majesty, it has just been announced that Christopher Columbus was a black man."

"How many times have I told you not to call me 'your majesty," woman?"

"None, your royal highness. We have never met before."

"Please leave," said the computer. It took all the big decisions.

"Should I have a plate of spaghetti carbonare?" Nef asked, as the woman retired.

"Yes."

While he was eating, he said, "Is the physical problem insoluble?"

"No."

"Have you solved it?"

"Yes."

"Speak."

"Holograms are normally imprinted on film. You must gene-sculpt your MCs for photosensitive skin. They will then receive hologramming and can be made, at the correct formative stage, to conform to the shapes of whatever holograms you wish — yours and Branzi's. A perfect you, a perfect Branzi. Together, they can make love eternally, while you get on with artistry."

Nef was too stunned to speak. He put his fork down slowly, as if laying a wreath. Wrapt in thought, he moved into the next room. built to simulate the wilds of Salisbury Plain about Stonehenge. A black man was lurking among the giant stones.

"Christopher Columbus?" Nef asked suspiciously.

"I'm beginning to think there's something funny going on," the black man said. "You're the fourth elephant that has spoken to me today."

"Out, vile jelly!" Nef said, dismissing the man and stalking into the wilds with his wild surmise. Was 5505's suggestion practicable? It only needed work on it, research, development. The future was glorious. Yet another art form was born! The ultimate art form, with the self as medium. He scratched the palm of his hand, exclaiming to himself as he strode along.

"I can see it now! A perfect schizophrenic existence! I live as myself, the creative genius. I live also as Nef, the perfect lover. The ultimate in integrated duality!... For her too, the same double life!... And sometimes, a change of roles. My simulacrum will create while I love. Sometimes I will love the real creature, sometimes I will love her shadow...

"Nor will that be all. For why pause there? Why see any particular richness in a mere double life? What generosity is that? Why not create three, five, a dozen, an endless series of mirror images of myself and of her? And of all my lovely friends?..."

He paused, stunned, before a shimmering vision of the future. The old narrow confines of life, with its miserable either/or alternatives eternally diminishing year by year, would be utterly overturned. From now on, a man would be multitudinous, his Now no longer a solitary candle but as countless as blades of grass... At last, Art and Sciences would unite to banish the most radical and beggarly of all Nature's limitations...

A butterfly settled on a stone by his left hand. He struck at it.

A scroll of paper unfolded from the waist of the butterfly. It read:

"Branzi Maisel had never looked more beautiful. Her pale face was oval, with freckles sprinkled lightly across her nose; her eyes were a slightly grey Norfolk tone of blue, and her lips were red. Her black hair reached to her shoulders without a curl..."

"I will not be distracted," he said. "5505 and I have rolled aside the barriers. We have altered everything. We have invented a new way of life that makes life so far seem like little more than symbols printed on a page.... Love has conquered! Beauty! Fecundity! Delight!"

He and the computer set to work next day, refusing interviews even to such illustrious men as Frank Krawstadt, shutting themselves in the workshops in Vienna, mustering their entire staff, human and machine, to invent the new kind of life.

Three weeks later to the day, the first model Nef MC simulacrum. They touched each other with groping hands and then began ploddingly to move about each other, as if always on the brink of attempting some definite course of action which might bring them fully to understand each other, as they clumsily felt each other's bodies, stumbled back, fumbled again, doddered backwards, tumbled over one another, shambled apart, went together again, groped, tirelessly felt and blundered apart, and felt again.

In a forgotten drawer, another future buzzed angrily as snow and rose pelted past the window, fluttering up towards a perfect meringue sky.

FORTY MILLION MILES FROM THE NEAREST BLONDE

Branzi Maisel had never looked more beautiful. Her pale face was oval, with freckles sprinkled lightly across her nose; her eyes were a slightly grey Norfolk tone of blue, and her lips were red. Her black hair reached to her shoulders without a curl, although it doubled in on itself to tickle the stem of her neck.

She wore a long grey dress with yellow and blue flowers on it.

Rosgard Never moved towards her. He was bearded, gowned, and he looked alchemaical. About him was a hint of existentialist darkness.

They smiled at each other.

They touched each other. Static electricity flared, sparks burst between their fingers. Both fell back exclaiming with pain.

"Damn it, we're not real!" Never exclaimed. "You look so real, so beautiful, but real people don't electrocute each other!"

"You looked real to me too. We're just simulacra, aren't we?"

He looked confused. "Is that all we are?"

She pressed her forehead, besieged by feelings of deja vu. She wanted to ask him if they had not been through this scene before, but predestination drove her on to say, "We must be simulacra, although I feel real enough."

He sank onto a fallen tree and said, "Branzi, you look so real, so beautiful..."

"You look real to me too. And my feelings are real enough. I have so much love for you that I could sing. But that's what happened to robots and androids, isn't it, many centuries ago?"

"What happened to them?"

"People could not lick the problem of static electricity. There were the most fantastic androids, just like people to look at, behaved just like people — except that they had no charisma — were as much fun as people, and yet they always gave off static electricity. They all had to be scrapped in the end. You see androids only in museums nowadays."

He rose with dignity from the fallen tree, for it had commenced to get up again. "You think we will have to be scrapped?"

"No, my darling, our love is such that we can never be scrapped. Not until the last mountain tumbles into the sea and the last barrel of oil is raised from the fossil strata... No, wait, that's not it. Fossil oils ran out long ago, didn't they?" She looked at her watch. "How do I know if this watch is telling the right time? What I mean to say is that we can never be scrapped because there are no real humans left to scrap us."

"There are humans on Mars still." He watched the tree go with a certain poignancy, as if he were knitting an exceptionally long sock and had just turned the heel.

"But the humans on Mars all dye their hair blonde and live only for Grillparzer. What I mean is, what I mean to say is..."

A leaf in the shape of a small Viennese woman settled on the table by her left hand. It distracted her. She looked at it closely, discovering anew that she got slightly different views of the world

if she closed her eyes in turn. Ah, the folly and grandeur of even a simulated life!

"I guess it was those alien invaders from the gas giant who killed off all the humans," Never said. "Weren't they annoyed about something?"

She giggled. "They said they came only with peace in their hearts, and then they got shut in a drawer... Pretty childish, wasn't it?"

"I don't know. Think what the gulfs of interstellar space must be like. Think of traveling all that way for all those years —"

"A stupid thing to do, if you ask me. Anyone that does all that deserves to be shut in a drawer. If you can't make a go of it in your own solar system, then you don't deserve to make a go of it at all. That's what my old mother used to say. I wish she could have seen you. I know she would have approved."

He stretched out a hand to her. She withdrew.

"Look at my fingernails! Ruined! It's all that static electricity. Anyhow, what are we going to do, now that we've got the world to ourselves?"

"Who'd have thought it would have ended this way, the whole great going human affair? I can still hardly believe it — you look so real, so beautiful."

"Well, you look real to me too. We are just simulacra, aren't we?"

He shook his head in confusion. "Is that all we are?"

"We must be simulacra, although I feel real enough... There's just a slightly unreal feeling I sometimes get that — well, it's hard to describe. It's a sort of metaphysical feeling, you know what I mean?"

"Like being shut up in a drawer?"

She jumped up impatiently. "No, not like that at all. Sometimes I feel we are so close and yet so far apart. We seem to touch each other with groping hands, and then it's as if we fall away and have to keep on fumbling in the dark for each other, blundering, then fumbling again. We're so far from perfect..."

"Do you think we'll have to be scrapped?"

"No, my darling, our love is such that we shall never be scrapped, not until the last mountain tumbles..." The pain of deja vu was so great that she turned and ran from him. Never ran too. They ran down the Graben, past the statues of Mozart and Haydn and Beethoven, until she almost tripped over a computer. Branzi paused, picked it up, and showed it to Never.

"You know what this is?"

He tried to look alchemaical again. "Sure. It's a Tronzyme MXC 5505 All-Digit. Don't drop it, or

we'll wink out of existence!"

Branzi balanced the computer on her palm and stared at it, pulling a mock-melancholy face because it gave no sign of life.

"Alas, poor Yorick!"

The computer said, "It is a five-story drop to the Via Gabriele D'Annunzio, but being and not-being are one to me."

"Careful, careful," Never said to Branzi, waving his fingers in alarm. "Remember that we're no more human than that statue of Grillparzer. Don't drop the Tronzyme or we'll all wink out of existence. Just think, my darling, all of mankind wiped out, and only two simulacra left. Mankind, science, everything finished. Only art survives! Art and love!"

His words moved her so greatly that she dropped the computer. It fell to the cobblestones, and its plastal shell broke, sending its circuits scattering over the street, bobbing into gutters, freewheeling along flagstones.

They looked at each other. They were still in existence.

"Perhaps we are real humans," he whispered.

"The only ones in the universe!" she whispered.

"There are humans on Mars still."

She shook her head tenderly. "The humans on Mars all dye their hair blonde and live only for Grillparzer. Could we really be real, Never?"

"Damn it, we're not real. You look too beautiful to be real."

"You don't look real to me either. We're just simulacra, aren't we?"

They sank down together, close but not touching.

At last she said, "It must have been the invaders' rays that destroyed all the rest of humanity. They set up static electricity in the air. It will die down in time..."

"Then we shall be able to make love again!"

"Darling!"

"Darling!"

They couldn't wait. Sparks burned and snapped between them. They clung together, kissing and screaming with delight and agony.

First-rate sf about memory transfer, among other things, from a young (20) writer who has already sold to *Analog, Infinity, Vertex* and others. Mr. Brennert is a graduate of the Clarion Workshop and currently attends California State University at Long Beach.

A Winter Memory

by ALAN BRENNERT

I remember summer winds on my face as I jumped on and off the battered cablecars that crawled up San Francisco's hills and pits; I remember those same winds whipped to frenzied blows on my back as I traveled the Bay in a hoverskim. I remember the Oakland hills, and Chinatown, and the sun-pricked waters that slept beneath implacable wharves.

But they tell me that Frisco was destroyed in the quake of '86 and that I, born in '84 in dusty Houston, could never have known the wind and the water and the life of San Francisco in 1982.

But I remember. Every street, every sign, every moment.

Damn it, I *do!*

Eyes like coins of a forgotten mint; there, see the inscription, *In God We Trust.* That's us, Macklin thought, we're God.

Laurance Macklin took the syringe from the hand of the pale-faced nurse handling the anesthesia. She'd administered a local, numbing only a small area near the base of the neck; Macklin found in and injected the peptide solution into the brain of the man who sat before him on the table. He waited.

"Del, did you feel that?"

Del Parrish shook his head. Macklin watched him for signs of effect. There was a gleam in the man's eyes, an active spark of intelligence so necessary for this kind of work. But over that spark, and over all his flesh, was scar tissue: thickly cultivated so that no one could ever look *into* those eyes, merely *at* them. The years that had struck him were few —forty-five, did the records say? — but they had hit with force and velocity, and they had hurt. Of that Macklin was certain. Beyond that ... what? He was a likable person, a pleasant

conversationalist, a creative man by his psych charts ... but somehow tired. Somehow dead.

"Anything visualized yet?" Macklin asked.

"No," Parrish said. "Wait ... yes. A sled. A large sled. Pulled by ... dogs?"

Macklin nodded. "Fine." The memory material had been taken from an eighty-year-old Senator from Alaska; what Parrish was recalling were the sights and sounds of the politican's youth. It did not matter that the old man had not been able to recall that youth himself — the amino acids held the memory and, given a new mind to summon those hidden images, were bringing them into play once more.

"Only a winter memory," Parrish said. "Riding up to my uncle's cabin in the northeast for Christmas — the white skies, the white land ... so much lovelier than Nome, but ..." He shook his head, trying to shed the memory.

"No, Del don't." Macklin put a hand on his shoulder and Parrish stopped. "Keep it up. Keep remembering."

"You don't understand," Parrish said, voice soft. "I grew up in Texas. We never had winters like — this! So beautiful, I mean. But I loved those winters anyway, I really did ... and now I have this, *his* winter, but mine too, so much better —"

"Don't think of them both. Think of one winter at an uncle's cabin in Alaska. What year was that?"

Reluctance. "Nineteen ... sixty-six." His voice was a thread as a part of him recalled, "I wasn't even born yet..."

"Tell me about it. That winter of '66."

Del Parrish, born 1984 in Houston, Texas, told Dr. Laurance Macklin about the Christmas of the winter of 1966 in northeast Alaska. His eyes lost their dull film of confusion and came alive as he recounted every detail of that holiday, from the tree-trimming to the sleighride, from clear motionless nights to the yelp of the dogs that pulled the checkered sled.

He hadn't yet finished when Macklin cut him short. "That's enough for now, Del, thanks." He motioned to the nurse. "Lyn, take him to his room."

"I can find it myself," Parrish said with a trace of irritation. "I'm not hallucinating. Just ... remembering."

"Yes, of course."

Parrish stood up, hesitated only a second as he got his bearings, then walked out of the labroom and into the hall. He started in one direction, then stopped, then turned around and disappeared

from sight. The nurse looked at Macklin with worry in her eyes.

"He'll be all right," he assured her. "He just gets confused after every transplant. Small wonder this time; I gave him more of Conada's past than that of any other donor."

"How much was that?"

"A few months. Each peptide contained a chain of aminos equivalent to about a week of experience. We can't risk any longer than a few months from each donor — he has too many memories not his own to live with."

She stared at the door out of which Parrish had walked, her grey eyes wide. "How many men is he?"

Macklin hesitated; her phrasing gave him pause, made him see Parrish as an image on an out-of-focus holovision: shadowed many times over. "That was the second major injection in as many weeks; Gerri Kellogg assisted on the first. We gave him a few recollections from a man living up in New Frisco — sixty years old with all his memories intact, unlike Senator Conada." He put the syringe away, began jotting a few notes on a pad.

"And now the Frisco man can't recall what Del can?"

"Right. No great theft, Lyn; he's seen a thousand summers like the one we gave Del. Hell, with what we paid him for the memory maybe he can buy himself an assful of adrenalin and start all over again."

She smiled. "Is that what Del is doing with his salary?"

Macklin put the notebook away and headed for the door, Lyn beside him. "I hardly think so. From what I see on his record, he's got hell's own share of alimony payments to make. The money we're paying him to play guinea pig is just enough to provide child support and to keep himself alive — little more."

Out in the corridor, the sounds of too many research projects crowded into too small a building became painfully clear: the sound of glass brushed against glass, the murmur of voices low and intent, the occasional shouted curse. The LA Bio Institute was a small center, a paper corner of the government's research budget, most of which had been swallowed up by NASA in that agency's desperate bid to absorb funds for an unpopular program. As a consequence, Macklin had little staff other than visiting consultants and medical personnel from other projects — assistants like Lyn, most of them confused or curious as to just what in hell Macklin *did*.

"So now he has two pasts," the nurse said musingly.

"Three. Don't forget his own."

"He seems to want to. Why would anyone volunteer for this

kind of research if they didn't?"

A good question, and one which Macklin did not feel like asking himself right now. He branched off into another corridor, saying good-by to Lyn, and headed for his office on the second floor.

When he got there, Conada was waiting for him.

The old man was sitting in the waiting room, perhaps enjoying the secretary's unease in his presence. Conada's creased tan hands were almost indistinguishable from the leather of the chair in which he sat. His face, too, was lined with age; for him, every year had been a cutting wind that had razored across his flesh, marking time by slow scars. His lips were stretched tightly over yellowed teeth, giving his lower jaw the appearance of a wooden skull's. But his eyes, though faded, were alert. There was no doubting the man was alive.

But there was no doubt that he was dying, either.

He looked up and saw Macklin enter. "Dr. Macklin," he said briskly. His voice was coarse brown sandpaper, it grated against Macklin's nerves.

"Senator."

Conada tried to smile. "How is your man?"

"My subject, Senator. He's his own man. Is that Congress asking, or you?"

"I could say Congress, but I doubt if you'd believe me."

"I doubt if I'd care."

"And if I begged personal interest?"

"That I might see."

Conada chuckled. "Your priorities are mixed, Doctor. But let it go at personal interest." His eyes were suddenly very sharply focused. "I'd like to see the man who has my memories."

Macklin sat down on a low couch opposite him. "Why?"

"Curiosity. I'm interested to see if my past is really in another man's head."

"More than interested, I'd guess," Macklin said. "For Christ's sake, Senator, don't pretend your involvement in this is casual. You pulled a hell of a lot of strings to get your peptides transplanted into Parrish; I received word that you would be the next donor, and it was made very clear that there was no choice involved. Since I was looking for a man in the first stages of —" He caught himself, but Conada was not fooled. The Senator smiled.

"Senility?" he prompted.

Embarrassed, Macklin continued, "—recall decay ... since we needed someone who couldn't recall his memories, to see if Parrish could ... I accepted you. But that's a lot of trouble to go to on your part for the advancement of science. It won't wash. What do you want from Parrish?"

Conada stared a moment, and his eyes seemed to lose some of their studied hardness; he averted his gaze. "What do you think? If you couldn't recall your youth ... your past ... important things." He looked at Macklin. "He can. I want to touch that part of me that he owns now, just touch it, not take it. That's all." And this time his eyes held a hint of pleading.

Macklin considered for a few seconds, then stood up. "All right, come with me."

Conada followed as Macklin led him down the overcrowded corridors to Parrish's temporary room. He wasn't sure why he was giving the old bastard this much, but the same questions that Conada was likely to ask would have to be put to Parrish anyway, to ascertain that the transplant had been complete. Conada would be as good an interviewer as any, he supposed.

Hell, maybe better.

Macklin knocked on Parrish's door. From within came Parrish's endlessly — sometimes damnably — patient voice, a bit tired but not strained. "Come in."

They entered. Parrish lay on the crisply antiseptic bed, the blinds drawn, the room rather dim. In keeping with the budget, it was a cigarbox of a room, almost a closet, furnished with steel furniture and padded with a sterile silence. Parrish sat up. "Hello, Mack. Who do you —" His eyes widened as he stared at Conada in genuine disbelief.

"Del, what is it?" Macklin said.

"My uncle," Parrish said tonelessly. "Who ...?"

"This is Senator Joseph Conada. The memory donor."

Parrish relaxed. "Sorry." He looked at Conada. "You look a great deal like my — your uncle. Gave me quite a start." He extended a hand as he dropped his legs off the edge of the bed. "Del Parrish."

The senator took his hand, smiled a taut leather smile. "Glad to meet you, Mr. Parrish. I suppose you've already met me, in a way."

"In a way," Parrish said. His voice was not cold but not warm.

"The Senator will be aiding me in the interview, Del."

Parrish gave Macklin the sharpest gaze he had ever given him. "Oh? At whose request?"

Macklin hesitated. "His," he admitted.

Conada glanced irritably at the biologist.

Parrish sensed the Senator's need immediately. "You want your past. You couldn't remember it when it was in *your* head; now you think you can come and unreel me like a tapedeck and play home movies for you."

Conada approached him cau-

tiously. "Mr. Parrish ... I'm taking advantage of my position, I grant you, but I don't think I'm asking for very much. Do you?" There was a smugness in his voice.

Parrish glared. "What if I do?"

"Senator, Del." Macklin's tone was conciliatory. "Senator, he owes you nothing. Don't try to plead duty, there is none involved." He turned to Parrish. "Del, you have no responsibility toward him, granted. But we do have to go through with this anyway, and he might be a help, and ... look, just listen to him. If you don't want him here after that, we'll throw him the hell out, but give him a chance, okay?"

Parrish frowned, then shrugged. "All right."

Macklin looked obliquely at Conada. "Well, Senator? Tell him what you told me. He has a right."

Conada stared at Parrish, searching for a place to start. Or a lie to grab. Finally he sighed and surrendered to the truth. "What do I say to you, Mr. Parrish?" he said quietly. "An old man's memories aren't worth anything — except to an old man. I'm eighty years old. I've forgotten what beginnings were like, and all I can see are endings. You have part of something — close — to me. My youth. All I want to do is touch it. Maybe that will bring back some memories that I still do have, before ..." He tried to lick his lips. "*Am* I asking too much?"

It seemed the question was sincere. Parrish shook his head. "No, you're not." He drew a short breath. "All right, what do you want from me? Alaska in the winter — Christmas, the dog sled, Uncle Matt? All I have is one winter of yours, Senator. What do you need?" His voice was weary, terribly so.

Conada said, quietly: "Do you remember ... do you remember Raya?"

Parrish's eyes went glassy a moment, and then he nodded. "Yes."

"Tell me. Whatever you can."

Parrish shut his eyes. His voice did not change much, nor did he smile; but there was something different in his face nonetheless. "Seventeen ... seventeen and very lovely. Long dark hair that fell on pale white breasts; a mouth that was wide and warm when she smiled; eyes like stones cast out from some simmering volcano, black and igneous. They burned when angry — they burned when we made love ..."

Conada said, "Yes," but Parrish did not hear him.

"One winter —" His tone changed; a chuckle came into it, and he opened his eyes, and they gleamed. "One winter we were driving back from the University of

Alaska ... it was damned cold ... and, Jesus, the roads were impossible by night! I got sick of driving, she got sick of driving. So we stopped and spent the night by the roadside because there was no place else to go, we were so far out of the way." He laughed. "Children of the liberated Sixties, making it in the back seat of a Ford just like their parents did! Seemed so damn funny at the time. So ... damned ... funny—"

His voice trailed away; the laughter disappeared from his tone and from his eyes, and he continued to stare at empty space for several seconds, his mouth open in a vacant smile. Then he snapped his gaze back to Conada.

"*No,*" Parrish said sharply, vehemently. "No, that's not my youth. At seventeen I was still a virgin, still indoctrinated into the American myth of purity and good-time morality. I never loved anyone in a car on a road in Alaska — I may have wanted to, I may still wish I had, but I didn't." His eyes burned; if there was scar tissue now, it was flame-red — "Did *not,* goddammit. *Did not!*"

His voice was ragged and raw. Conada backed away, and Macklin pointed him toward the door.

"I'm sorry," the old man said, first to Parrish, then to Macklin. "I'm sorry."

"That's a comfort," Macklin snapped. "You got what you came for. Get your ass out of here."

He shut the door behind Conada and remained in the room for long minutes, watching as Parrish shook his head and clenched his fists, teeth set tightly together, eyes wet with the tears of a past he'd never known.

I remember the sea, the surf rising in supplication to the sun, the leaping out and up and into the sky and loving the salt of it, loving the life of it. And I remember plunging down, the waves closing behind my dorsal fins, and the long drop into the green stillness of the ocean ... dark and growing darker as I dived deeper into that stillness, drawing life from the sea, drawing breath ...

But I can't know that, none of it, because I've never been anything more than human. I've never been a dolphin; I've never touched the memories I *know* I *feel* I *had*—

But, oh, I remember the sea.

"NASA on line one, Doctor."

Macklin depressed the intercom key. "Who the hell called NASA?"

"No one here."

"Oh Lord. Pipe it in, Anne." He sat back in his desk chair, fearing that the space agency had appropriated yet another of his advisors. God!

The screen lit with the face of a

young man, his eyes deeply shadowed, his mouth very thin, his dress very conservative. He smiled, but it was the same plastic smile Macklin had learned to expect from bureaucrats. "Doctor Macklin? I'm Canfield Wallis, vice chairperson of the Investigative Board of NASA."

"What can I do for you, Mr. Wallis?" Macklin said warily.

"I'm calling on behalf of Chairperson Kolaney. There's a great deal of interest in our own biosciences department over your research."

"Quite a bit of that going around. Have you tried a laxative for it?"

"Pardon?"

"Nothing. How practical is *your* interest, Mr. Wallis?"

"As practical as you'd expect. We'd like to suggest a donor for your program."

Oh God, it *was* contagious. "I hardly think it the province of the space administration to recommend areas of exploration in the biological sciences. Sir."

"Perhaps not, Doctor. But we both seem to be on the same side of the fence as far as the public is concerned: the increase of human knowledge."

"The aim of this project," Macklin said calmly, "is not so much the increase of knowledge as it is of understanding. Understanding of other human beings and of the other species that inhabit this planet."

"Rather nebulous aims, Doctor." Wallis laughed.

The little twit. "Two weeks, ago Mr. Wallis, we injected a man with the memory chain of a dolphin. Today, part of that man understands what it is like to *be* a dolphin ... part of him understands just a little more than any other person in this world. Not very nebulous." The words were edged in ice.

"My apologies," Wallis said, a little weakly. "But you can sympathize with our needs, too, I'm sure."

"Which are?"

"Information. We have a memory we need recalled. You have the means to give it to us. Needless to say, we would not be asking this if it were not important."

"You would not be asking this if you were not in trouble. A memory you can't recall. Whose?"

Wallis hesitated a moment. "Colonel Lloyd Sanchez."

"*What?*" Macklin stared at the screen. "Are you serious? Take a dead man's peptides and transfer them to the mind of a live subject?"

"His brain was put in cryo in time. And I believe this *was* one of your planned experiments."

How did he — "Not for some

time. And certainly not with the present subject."

"It isn't dangerous, is it?" Not concern, a simple statement of fact.

"Not physically perhaps, but—"

"We are prepared, of course," Wallis continued coolly, "to offer Mr. Parrish any sum of money he might need to overcome the — psychological effects of the experience."

How the hell did they know Parrish's name? Or what Macklin's planned experiments were? Only the Bio Appropriations Committee had been apprised of the progress of his research, and ...

... and NASA practically *owned* the Bio Appropriations Committee. Lovely.

"All we want," Wallis explained, "is a record of what happened to Colonel Sanchez on the Ganymede survey."

Stall. Stall for time. "The news releases said that he died of oxygen starvation in a spacesuit filled with air."

"That's right. You see, the life-support system of his suit had two air supplies — primary and auxiliary. Normally, when the primary supply taps out, the sac depressurizes through a flap-orifice on the back of the pack. The depressurization triggers the emergency supply — that way, no temporary blockage can cause emergency oxygen to pump into the suit unless it's needed. When Sanchez was found, his primary was empty — but his auxiliary sac still had two hours' air in it, and his suit was full. Yet he had quite plainly died of oxygen starvation."

"The implication being that some force outside his LS system killed him?"

"Precisely what Congress believes. They've ordered the entire Ganymede mining operation to a standstill until we discover just what killed Sanchez. There are cliques that have been looking for just such a thing to shout a halt to the program."

Macklin tried to sound sympathetic. "I can see your problem, Mr. Wallis, but I'm sorry. I won't risk my subject going through death trauma, even in recollection. The shock might undo everything I've worked to bring to him."

"You'll have other subjects, Doctor."

"Training new subjects takes time."

"Which is why we need Parrish *now*."

"And what makes you think I give a flying —"

"*Doctor*," Wallis said slowly, and there was steel in his voice, "if the mining program dies, I can assure you — research cuts will not end there."

Macklin hesitated. A threat? They might be able to do it, the

bastards ... they'd wormed their way this far into Macklin's privacy. And they would have no compunctions about putting a stranglehold on his work if it meant saving the mining of Ganymede.

"I'll ask Parrish," Macklin heard himself say. "That's all I can do."

"Let's hope not, Doctor. I'll fly out to discuss ... arrangements with you. Thank you." The screen fell blank.

Macklin silently damned himself for even considering putting Parrish into such jeopardy. But ... *was* it Parrish who was in danger? Psychologically, the man was badly off, but any shock from the death transfer would be transitory and would probably only affect his newly acquired memories. No, what was in danger was the project — Macklin's dream of understanding, of empathy between man and other, alien life forms ... an empathy that might lead to a greater wisdom.

And yet ... if he did not cooperate, that dream was surely dead. If Parrish lost what he had already been given — well, Wallis had been right; there would be other subjects.

But he would still have to ask Del.

He thumbed the intercom. "Anne, get me Del Parrish's apartment."

A few seconds later his secretary replied, "He doesn't seem to be in, Doctor, but the answering service we had installed for him says he's spending the day at — Griffith Park?"

Of course. It was a Saturday, and Parrish had temporary custody of his two children on weekends. But this couldn't wait until he reported in next week for further tests.

"Thanks, Anne. I'll be out the rest of the afternoon. Close up shop if you like."

"That?" Parrish was saying. "That's a Kodiak."

Parrish and his two daughters stood looking down into a bearpit, watching a fat brown bear loll lazily in the heat. Macklin, some yards distant but within hearing range, recognized the children from photos: the smaller, Bette, was a quiet blonde; the taller, Lora, was a talkative elf with jet-black hair worn short to her sister's long. Both were six years old, Lora the senior by ten months.

"He looks hot," Lora observed.

"Probably is," Parrish said. "His home is in Alaska."

"Alaska? Where's that?"

Parrish smiled. "Far away, honey. Very far away."

Macklin disliked interrupting their afternoon and held back as he decided how to approach, but

Parrish, turning, saw him and beckoned him over.

"Mack! Come on over. Like you to meet my grandparents here."

The girls grinned.

"Lora and Bette, if you didn't know from records," Parrish said as Macklin approached. "Look alive, you two, this is the boss. Dr. Laurance Macklin."

"The title is better than the salary, Del. Keep it Mack, kids; your father has an obsession for authority figures."

"You're the man who puts things into daddy's head, aren't you?" Bette said, eyeing him curiously.

Parrish laughed. "Don't be melodramatic, Bet, it's only a job."

Macklin smiled. "Del — I'm sorry to barge in on your get-together, but ... something's come up."

"You need me back at the institute?"

"No, I need you here. For a talk."

Parrish nodded understanding. He pointed the girls in the general direction of the ice-cream vendor and gave them some loose coins. "That's Doctor Mack's the-sky-is-falling tone of voice, loves. Go over and stuff your faces with ice cream while I find out what part of the world is collapsing today, okay?"

The girls grabbed the money and headed off for the ice-cream.

Parrish looked after them a moment, then turned back to Macklin. "What's on? You receive flak from Conada or something? I *am* sorry about that little incident, Mack, but —"

"No, nothing like that." Macklin edged away from the other people who stood nearby. The two men leaned over the railing of the bearpit as the sun attempted to break through the LA smog cover, a think reek of waste on the wind.

"I got a call from NASA today. They want to use you to recover some lost knowledge. Use your mind as Conada used it."

"I thought we were going to continue with the animal transfers."

"We were. Are. But NASA wants to find out just what happened on the Sanchez mission. They want me to inject you with his peptides and have you reconstruct the trip."

Parrish whistled. "A dead man's memories? Jesus. And an astronaut's, no less. It's so bizarre I'm almost tempted." He looked at Macklin carefully. "That in itself wouldn't have you so damned somber, though. What did they do, threaten to cut finances for the project?"

"How the hell did you guess that?"

Parrish smiled with a trace of bitterness. "Intuition. Forty-five

years' worth. By now I know every way people can twist around to do what they want and make you think you wanted it their way in the first place." He looked down at the bears. "I've had a lifetime of that already — people dreaming your dreams for you. Isn't that in your records?"

"Our records tend toward bloodlessness."

"Of course. It's implicit, though. Upper-middle-class life style all laid out like a dressmaker's pattern, minimal deviation from the norm."

"The stockbroking?"

Parrish nodded. "Practically hereditary. Oh hell, no, that's nonsense — I could have said no, could have tried another career, I just didn't want to. Too damned easy to follow the dance diagrams on the floor. I didn't allow another kind of life to enter my thoughts, and by the time I did, I was trapped.

"You don't know how much of a shock it can be to find you've been in prison for the better part of your life and you never knew it — and that one of the turnkeys is your wife. She either never realized it had been a business marriage, or she didn't care. Maybe she liked the pattern: husband, two children, no questions to answer. Everything was set out for me from the first moment I found myself in this asylum of a society — and I stumbled quite willingly into the ankle chains." He laughed softly. "It fell apart, somewhat atypically — most of those kind of lives may wither, but they have a tendency to keep on going forever. Mine just snapped and broke. I should be grateful for that, I suppose."

He looked over at the two children, who eagerly devoured twin sherbets several yards distant. "And they got caught in the fallout. I don't think they'll fall into the same traps I did, Mack — and they don't need me to warn them. But ... God. I need them. They're the last things I have that weren't made *for* me." There was a touch of pride in his voice. "Hell, they made themselves."

Macklin was quiet a long moment. Finally he said softly, "That's why you're reacting more to the transplants than previous subjects, isn't it?"

Parrish shrugged. "I suppose so. I wasn't so bad at first, having memories of things you never knew exactly in that form — love and summer and wild, frenzied weekends in places you'd never been — remembrances of things passed and never touched. But I knew all those things, in different ways and different places; really I did. But now —" He paused. "Now I'm remembering things I can never really know. The joy of breathing

and living below the sea, of jumping up into the sun ... images of being things that I'll never, never be. But *was*. Somehow. Jesus, that hurts like I never thought it would."

He stared at Macklin, coolly. "And now you want me to remember not only a life I never led, but a world I'll never know? Ganymede. Something else to pass?"

Macklin turned away. "I'm sorry, I shouldn't have asked. I think I probably knew most of what you told me, but ... oh, crap, Del, I *had* to ask."

The two of them stood in the sickly breeze, not speaking, for a full minute. Macklin wanted to turn and run — but he couldn't. He felt that if he ran his world would shatter around him, as indeed his project, his dream, would now.

Finally Parrish spoke. "They offered money, of course."

"Yes."

"How much?"

"Blank check. They're desperate."

Del was silent a moment. Then: "One hundred thousand dollars," he said.

Macklin turned abruptly back to the older man. "What?"

"I said I'd do it for one hundred thousand dollars." The words were calm, measured, flat.

"But —"

"You don't think they'd give it?"

"Well, I don't see why not; compared to their total budget, it's not exorbitant. But why? Why put yourself through the extra hell?"

Parrish smiled. "The same reason I've been going through the present hell, Doctor Mack, sir. I've needed the money for alimony, for them." A nod toward Bette and Lora. "A hundred thousand, and I could make a lump settlement with my ex-wife — I wouldn't have to prostitute my mind any longer. I'm afraid that would mean I'd be out of the project, Mack. But, hell, you can get other subjects."

Macklin sighed. "That seems to be the observation of the day." He managed a halfhearted smile. "All right then, Wallis said he'd fly out immediately; I don't doubt that Sanchez's body is also on its way. The bastards are so damned sure of themselves."

"They have reason to be," Parrish said sadly. "They always do."

I remember the stars.

Dimly, as dimly as they appear on Ganymede itself. It's impossible to see anything that's in the same sky as Jupiter. Its brightness bathes the moon in a perpetual dusk, a frozen moment between night and day that you know has lasted for eons. It washes the stars from sight,

keeps you from seeing anything but itself.

Unless you turn around and face the other horizon; then the stars appear, hesitantly, in the blackness. Planets, too, and one bright yellow point of light: the sun, faded to a far spark.

And then you turn back to Jupiter and forget all about Sol, or Earth, or the space station that arcs above you.

What? Yes, I ... I remember every detail. Jupiter was hunkered down on the horizon like a fat drunkard with a bleary bloodshot gaze: the Spot staring down with a psychotic brilliance. The bands were wrapped about the planet like belts around that same drunkard — tightly bound yellows and greens and browns that still could not restrain the bulge at the equator. Everywhere you looked, it was there...

I was supposed to begin triangulation with Mathers and Kanin. I set up the equipment, all the time glancing at the giant in the sky like a little boy at church, fearing the eye of his God. Jove, the *only* God for this world.

I squinted into the distance. This world was rock from edge to edge: the mountains in the distance looked like rock tumbles erected as a monument to some fallen warrior. Or perhaps some fallen lesser god, one blinded into submission by giant Jupiter; I could not rid myself of the religious imagery. It seemed as if a man, or group of men who decided to live here could not avoid praying before an altar of stone to this huge Hellbeast in the sky. It seemed only ... natural.

I'd begun triangulation — if one of the others was unaccounted for, I could use the Orbiter above as a reference point — when I really, I *really* began to appreciate the beauty of this world. I stared out across the rocky expanses, looking out at the drifts of ammonia snow, the tundra that brought to mind the forgotten Earth, and winters in the icy corners of Alaska ...

I mean Arizona. I mean ...

Everything so marvelously preserved in the thin atmosphere; the fissures in them marking long-ago landquakes. Ganymede's was a timeless beauty, a beauty of untouched alienness, and inside my suit I felt very clean, as if I were not actually despoiling that beauty by touching its surface with alien feet: there was a buffer of sanctity around me.

It was so beautiful. But so was Arizona, once. Before the fuel shortage, before the strip mining that scarred the face of the land like acid on flesh. I remembered the slow, surgical disfigurement of the flat plateaus, the Indian lands,

the scream of the mountains as their guts spilled from them like soldiers struck by enemy fire ...

Old warriors, old soldiers, long dead.

And now these warrior-mountains, this proud land, also to be scarred and scraped and hollowed to give minerals and strength to an Earth that never knew how or when to stop *hurting*...

... I remember oil on my water as I dropped beneath the waves, free ...

No, sorry, that's not ... I'm not ...

...I remember the men who destroyed my homelands, men who shrugged and said nothing could be done for it, men who I thought were either evil or weak. Standing there on Ganymede's face, about to put the blade to it, I suddenly knew it to be more weakness than evil...

Jupitergod, this is your domain! This is your Heaven, not our Hell!

... the pipeline which stretched through the Alaskan wastes, a long serpent with black venom in its body...

Stop it! Conada, the dolphin, *Sanchez* —

Sanchez.

Lloyd Sanchez: I took an anglo name ...

I ... I looked at the land, somehow loving it, somehow fearing it. This wasn't Earth, and it wasn't Arizona, and I meant more than those weak bastards who had gutted the desert; I was more pivotal, here. Wasn't I?

No. One man never made any difference. He only made a difference when his welfare endangered the welfare of the project. He only mattered when he ... died ...

Mother of God, what shall I do?

No, not Him, not Her.

Dear Jupiter, what must I do?

In the dusk-glow of my god, I waited a long while; stumbled to the distant hills and back again, breathing heavily, using up my oxygen faster, faster more. Then I returned to my equipment and began triangulation, belatedly, letting my distant friends know where I was.

I looked at my air gauge: almost empty on the primary. Five minutes before depressurization; three hours of emergency air after that. And the shuttle was due to pick me up in an hour.

Very carefully I lay back on the flattest surface I could find, my backpack pressed tightly on the hard rock; I felt very much like a turtle on its shell. I waited ... knowing that the flap on the back could not open in this position ... that when it failed to depressurize, the auxiliary sac would not activate.

I knew ... that the pressure

buildup would force a change in my position, and in the lesser gravity would move easily, perhaps ending up face-down ... the sac would depressurize. Eventually. But certainly not before my brain died of oxygen starvation. When the sac blew, the auxiliary would come into play and breathe air into my suit to replace the carbon dioxide even now growing ... and Mathers and Kanin would find me dead of oxygen lack in a suit filled with air ... and that would call a halt to the project, at least until they found out what happened ... at least until someone cared ...

Madre de dios, *no*...

Jupiter!

Raya!

My sea!

My winter!

Lora! Bette!

"Del!"

Macklin slammed the flat of his hand into Parrish's right cheek. Parrish stopped screaming and fell silent, shutting his eyes and trying to shake off the memories. He sat crouched in his chair, eyes now-open, now-closed, as if taking in the firm reality of the labroom a little at a time.

Wallis snapped off his tapedeck and eyed both Macklin and Parrish with trepidation. "Is he all right?" he said quietly, looking at Parrish.

Macklin's gaze was cold and unblinking. "Don't worry yourself, Mr. Wallis. If he isn't, NASA can always iron out those 'psychological effects.' You told me so yourself."

Wallis frowned and pocketed the recorder. "The money will be made good. We — we're very grateful, Doctor."

Macklin did not reply as he gave Del a tranquilizer. Wallis drew a deep breath. "Sanchez's spacesuit was faulty, you know."

Macklin turned, a thin sardonic smile tugging at his mouth. "I thought it might be."

They understood one another. "That will all come out when we play the tape for Congress," Wallis said. "The auxiliary supply must have come into play accidentally and overoxygenated the suit ... produced a euphoria..." He paused under Macklin's disgusted stare. "It *is* possible, Dr. Macklin. Something had to trigger his suicide —"

Macklin nodded. "Something did. There was no unseemly *commitment* involved, I take it?"

Wallis' gaze was stony. "No. Nor will the tape show there to be any." He turned to leave, then paused and looked back. "I don't need to tell you that this conversation is subject to the same terms as our, uh, experiment?"

"Meaning if I-talk, my funds are cut?"

"Bluntly, yes."

Macklin glared at him. "All right, dammit. You've got what you want and you know what you want it to say. Get out."

In the doorway, Wallis paused again. "We *are* grateful, Doctor."

Macklin did not respond. Wallis left, the snick of the closing lab door breaking the tense silence.

"Del...you all right?"

After a moment, Parrish nodded dumbly.

"Did you feel him die?" Macklin asked quietly.

Parrish shook his head. "No, not really." His voice was hoarse. "I felt him die...*for* something. I felt him give up something he loved very much to save something else he loved as well. That's...another thing I've never known. I've never given anything of myself — except maybe with the kids. Feeling that was worse than seeing the beauty up there."

"But Sanchex was psychotic. Mining Ganymede isn't the same as our rape of Indian lands. He snapped in an alien environment, and somehow his homeland became transposed onto Ganymede."

Parrish nodded. "I know, but memories can twist you out of shape as much as anything else. Even so, he died for something he thought was real. He died chasing his own dream, no one else's."

Macklin helped him to his feet.

"You're sure you're all right?"

"As right as I'll ever be. My money?"

"NASA's having it transferred to your account."

"Good." Parrish began to dress, wiping the perspiration from his face.

Macklin felt oddly worried. "Del...where will you go now?"

Parrish shrugged. "I don't know. Travel, probably. Go to New Frisco and ride the — no, they're all hovers now. Well, what the hell. Might try skin diving — take a look at the sea from the other side. Maybe Nome." He grinned. "Maybe I'll even take a shuttle hop to the Moon, take a long hard look at the stars again." He saw Macklin's frown. "Oh Christ, you've got your chicken-little look on again. What is it?"

Macklin hesitated. "You know, don't you, Del, that you're not really changing anything? If you used to follow other people's dreams, now you're following their memories."

"And if I stay here, all I have are the memories." He smiled weakly. "You're absolutely right, Mack; I suppose I was never cut out to be a leader of anything, maybe not even of my own life. I'm a follower." His tone grew serious. "And if you keep on Mack, you'll end up just where I am."

Macklin stiffened. Don't deny it...

"You've let yourself be manipulated by Conada, by NASA, even by me," Parrish said. "You could've ordered me to take part in the death transfer; it was within your rights. I would have told you to go to hell, but you should have tried. But now it's not going to end there, and you know it. Every government...every political party... everyone this side of the Moon is going to try to grabass your work. The memory of one spy in the mind of another. The past of an incumbent politician stolen by a hopeful. They're going to try and take it all away from you, your entire hope of human understanding — and they might succeed."

His voice became low. "And then you'll wind up just where I am, Mack — burnt out and knowing that you've pissed your dreams away, giving yourself up to memories of what could have been."

He shrugged on his jacket, extended a hand. "Good-by, Mack."

Macklin did not take the hand. Parrish smiled, turned, and left.

Macklin clenched his hand into a fist.

No.

And could feel the gap between them widening.

Joe Haldeman (b. Oklahoma City 1943, B.S. physics and astronomy, U. of Md.) has been writing full-time for just over three years. He has done one mainstream novel (WAR YEAR, Holt, 1972), but most of his work is in science fiction. He is currently working on two sf novels while studying at the Iowa Writers Workshop.

To Howard Hughes: A Modest Proposal

by JOE HALDEMAN

1. 13 October 1975

Shark Key is a few hundred feet of sand and scrub between two slightly larger islands in the Florida Keys: population, one.

Not even one person actually lives there — perhaps the name has not been attractive to real estate developers — but there is a locked garage, a dock and a mailbox fronting on US 1. The man who owns this bit of sand — dock, box, and carport — lives about a mile out in the Gulf of Mexico and has an assistant who picks up the mail every morning and gets groceries and other things.

Howard Knopf Ramo is this sole "resident" of Shark Key, and he has many assistants besides the delivery boy. Two of them have doctorates in an interesting specialty, of which more later. One is a helicopter pilot; one ran a lathe under odd conditions; one is a youngish ex-colonel (West Point, 1960); one was a contract killer for the Mafia; five are doing legitimate research into the nature of gravity; several dozen are dullish clerks and technicians; and one, not living with the rest off Shark Key, is a U.S. Senator who does not represent Florida but nevertheless does look out for the interests of Howard Knopf Ramo. The researchers and the delivery boy are the only ones in Ramo's employ whose income he reports to the IRS, and he only reports one tenth at that. All the other gentlemen and ladies also receive ten-times-generous salaries, but they are all legally dead, and so the IRS has no

right to their money, and it goes straight to anonymously numbered Swiss accounts without attrition by governmental gabelle.

Ramo paid out little more than one million dollars in salaries and bribes last year; he considered it a sound investment of less than one fourth of one per cent of his total worth.

2. 7 May 1955

Our story began, well, many places with many people. But one pivotal person and place was 17-year-old Ronald Day, then going to high school in sleepy Winter Park, Florida.

Ronald wanted to join the Army, but he didn't want to just *join* the Army. He had to be an officer, and he wanted to be an Academy man.

His father had served gallantly in World War II and in Korea until an AP mine in Ch'unch'on (Operation "Ripper") forced him to retire. At that time he had had for two days a battlefield commission, and he was to find that the difference between NCO's retirement and officer's retirement would be the difference between a marginal life and a comfortable one, subsequent to the shattering of his leg. Neither father nor son blamed the Army for having sent the senior Day marching through a muddy mine field, 1953 being what it was, and neither thought the military life was anything but the berries. More berries for the officers, of course, and the most for Westpointers.

The only problem was that Ronald was, in the jargon of another trade, a "chronic underacheiver." He had many fascinating hobbies and skills and an IQ of 180, but he was barely passing in high school, and so had little hope for an appointment. Until Howard Knopf Ramo came into his life.

That spring afternoon, Ramo demonstrated to father and son that he had the best interests of the United States at heart, and that he had a great deal of money (nearly a hundred million dollars, even then), and that he knew something rather embarrassing about senior Day, and that in exchange for certain reasonable considerations he would get Ronald a place in West Point, class of 1960.

Not too unpredictably, Ronald's intelligence blossomed in the strait jacket discipline at the Point. He majored in physics, that having been part of the deal, and took his commission and degree — with high honors — in 1960. His commission was in the Engineers, and he was assigned to the Atomic Power Plant School at Fort Belvoir, Virginia. He took courses at the School and at Georgetown University nearby.

He was Captain Ronald Day and bucking for major, one step from being in charge of Personnel & Recruitment, when he returned to his billet one evening and found Ramo waiting for him in a stiff-backed chair. Ramo was wearing the uniform of a brigadier general, and he asked a few favors. Captain Day agreed gladly to co-operate, not really believing the stars on Ramo's shoulders; partly because the favors seemed harmless if rather odd, but reasonable in view of past favors; mainly because Ramo told him something about what he planned to do over the next decade. It was not exactly patriotic but involved a great deal of money. And Captain Day, O times and mores, had come to think more highly of money than of patriotism.

Ramo's representatives met with Day several times in the following years, but the two men themselves did not meet again until early 1972. Day eventually volunteered for Vietnam, commanding a battalion of combat engineers. His helicopter went down behind enemy lines, such lines as there were in that war, in January, 1972, and for one year he was listed as MIA. The North Vietnamese eventually released their list, and he became KIA, body never recovered.

By that time his body, quite alive and comfortable, was resting a mile off Shark Key.

3. 5 December 1959

Andre Charvat met Ronald Day only once, at Fort Belvoir, five years before they would live together under Ramo's roof. Andre had dropped out of Iowa State as a sophomore, was drafted, was sent to the Atomic Power Plant School, learned the special skills necessary to turn radio-active metals into pleasing or practical shapes, left the Army and got a job running a small lathe by remote control, from behind several inches of lead, working with plutonium at an atomic power applications research laboratory in Los Alamos — being very careful not to waste any plutonium, always ending up with the weight of the finished piece and the shavings exactly equal to the weight of the rough piece he had started with.

But a few milligrams at a time, he was substituting simple uranium for the precious plutonium shavings.

He worked at Los Alamos for nearly four years and brought 14.836 grams of plutonium with him when he arrived via midnight barge off Shark Key, 12 November 1974.

Many other people in similar situations had brought their grams of plutonium to Shark Key. Many more would, before the New Year.

4. 1 January 1975

"Ladies. Gentlemen." Howard Knopf Ramo brushes long white hair back in a familiar, delicate gesture and with the other hand raises a tumbler to eye level. It bubbles with good domestic champagne. "Would anyone care to propose a toast?"

An awkward silence, over fifty people crowded into the television room. On the screen, muted cheering as the Allied Chemical ball begins to move. "The honor should be yours, Ramo," says Colonel Day.

Ramo nods, gazing at the television. "Thirty years," he whispers and says aloud: "To *our* year. To our world."

Drink, silence, sudden chatter.

5. 2 January 1975

Curriculum Vitae

My name is Philip Vale and I have been working with Howard Knopf Ramo for nearly five years. In 1967 I earned a doctorate in nuclear engineering at the University of New Mexico and worked for two years on nuclear propulsion systems for spacecraft. When my project was shelved for lack of funding in 1969, it was nearly impossible for a nuclear engineer to get a job, literally impossible in my specialty.

We lived off savings for a while. Eventually I had to take a job teaching high school physics and felt lucky to have any kind of a job, even at $7000 per year.

But in 1970 my wife suffered an attack of acute glomerulonephritis and lost both kidneys. The artificial dialysis therapy was not covered by our health insurance, and to keep her alive would have cost some $25,000 yearly. Ramo materialized and made me a generous offer.

Three weeks later, Dorothy and I were whisked incognito to Shark Key, our disappearance covered by a disastrous automobile accident. His artificial island was mostly unoccupied in 1970, but half of one floor was given over to medical facilities. There was a dialysis machine, and two of the personnel were trained in its use. Ramo called it "benevolent blackmail" and outlined my duties for the next several years.

6. 4 April 1970

When Philip Vale came to Ramo's island, all that showed above water was a golden geodesic dome supported by massive concrete pillars and arm-thick steel cables that sang basso in the wind. Inside the dome were living quarters for six people and a more-or-less legitimate research establishment called Gravitics, Inc. Ramo lived there with two technicians, a delivery boy and two specialists in gravity research. The

establishment was very expensive, but Ramo claimed to love pure science, hoped for eventual profit, and admitted that it made his tax situation easier. It also gave him the isolation that semibillionaires traditionally prefer; because of the delicacy of the measurements necessary to his research, no airplanes were allowed to buxx overhead, and the Coast Guard kept unauthorized ships from coming within a one-mile radius. All five employees did do research work in gravity; they published with expected frequency, took out occasional patents, and knew they were only a cover for the actual work about to begin downstairs.

There were seven underwater floors beneath the golden dome, and Dr. Philip Vale's assignment was to turn those seven floors into a factory for the construction of small atom bombs. Twenty-nine Nagasaki-sized fission bombs.

7. August 1945

Howard Knopf Ramo worked as a dollar-a-year man for several years, the government consulting him on organizational matters for various secret projects. He gave as good advice as he could, without being told classified details.

In August, 1945, Ramo learned what that Manhattan Project had been all about.

8. 5 April 1970 — 3 February 1972

Dr. Philip Vale was absorbed for several weeks in initial planning: flow charts, lists of necessary equipment and personnel, timetables, floor plans. The hardest part of his job was figuring out a way to steal a lot of plutonium without being too obvious about it. Ramo had some ideas, on this and other things, that Vale expanded.

By the middle of 1971 there were thirty people living under Gravitics, Inc., and plutonium had begun to trickle in, a few grams at a time, to be shielded with lead and cadmium and concrete and dropped into the Gulf of Mexico at carefully recorded spots within the one-mile limit. In July they quietly celebrated Ramo's 75th birthday.

On 3 February 1972, Colonel Ronald Day joined Vale and the rest. The two shared the directorship amicably, Day suggesting that they go ahead and make several mock-up bombs, both for time-and-motion studies within the plant and in order to check the efficiency of their basic delivery system: an Econoline-type van, specially modified.

9. Technological Aside

One need not gather a "critical mass" of plutonium in order to make an atom bomb of it. It is sufficient to take a considerably smaller piece and subject it to a

neutron density equivalent to that which prevails at standard temperature and pressure inside plutonium at critical mass. This can be done with judiciously shaped charges of high explosive.

The whole apparatus can fit comfortably inside a Ford Econoline van.

10. 9 September 1974

Progress Report

Delivery Implementation Section.

TO: Ramo, Vale, Day, Sections 2, 5, 8.

As of this date we can safely terminate R & D on the following vehicles: Ford, Fiat, Austin, VW. Each has performed flawlessly on trial runs to Atlanta.

On-the-spot vehicle checks assure us that we can use Econolines for Ghana, Bombay, Montevideo, and Madrid, without attracting undue attention.

The Renault and Soyuz vans have not been road-tested because they are not distributed in the United States. One mock-up Renault is being smuggled to Mexico, where they are fairly common, to be tested. We may be able to modify the Ford setup to fit inside a Soyuz shell. However, we have only two of the Russian vans to work with, and will proceed with caution.

The Toyota's suspension gave out in one out of three Atlanta runs; it was simply not designed for so heavy a load. We may substitute Econolines or VW's for Tokyo and Kyoto.

Ninety per cent of the vehicles were barged to New Orleans before the Atlanta run, to avoid suspicion at the Key Largo weigh station.

We are sure all systems will be in shape well before the target date.

(signed) Maxwell Bergman,
Supervisor

11. 14 October 1974

Today they solved the China Problem: automobiles and trucks are still fairly rare in China, and its border is probably the most difficult to breach. Ramo wants a minimum of three targets in China, but the odds against being able to smuggle out three vans, load them with bombs, smuggle them back in again and drive them to the target areas without being stopped — the odds are formidable.

Section 2 (Weapons Research & Development) managed to compress a good-sized bomb into a package the size of a large suitcase, weighing about 800 pounds. It is less powerful than the others and not as subtly safeguarded — read "booby-trapped" — but should be adequate to the task. It will go in

through Hong Kong in a consignment of Swiss heavy machinery, bound for Peking; duplicates will go the Kunming and Shanghai, integrated with farm machinery and boat hulls, respectively, from Japan. Section 1 (Recruiting) has found delivery agents for Peking and Shanghai, is looking for a native speaker of the dialect spoken around Kunming.

12. Naming

Ramo doesn't like people to call it "Project Blackmail," and so they just call it "the project" when he's around.

13. 1 July 1975

Everything is in order: delivery began one week ago. Today is Ramo's 79th birthday.

His horoscope for today says "born today, you are a natural humanitarian. You aid those in difficulty and would make a fine attorney. You are attracted to the arts, including writing. You are due for domestic adjustment, with September indicated as a key month."

None of the above is true. It will be in October.

14. 13 October 1975

7:45 on a grey Monday morning in Washington, D.C., a three-year-old Econoline van rolls up to a park-yourself lot on 14th Street. About a quarter mile from the White House.

The attendant gives the driver his ticket. "How long ya gonna be?"

"Don't know," he says. "All day, probably."

"Put it back there then, by the Camaro."

The driver parks the van and turns on a switch under the dash. With a tiny voltmeter he checks the dead-man switch on his arm: a constant-readout sphygmomanometer wired to a simple signal generator. If his blood pressure drops too low too quickly, downtown Washington will be a radioactive hole.

Everything in order, he gets out and locks the van. This activates the safeguards. A minor collision won't set off the bomb, and neither would a Richter-6 earthquake. It will go off if anyone tries to X-ray the van or enter it.

He walks two blocks to his hotel. He is very careful crossing streets.

He has breakfast sent up and turns on the *Today* show. There is no news of special interest. At 9:07 he calls a number in Miami. Ramo's fortune is down to fifty million, but he can still afford a suite at the Beachcomber.

At 9:32, all American targets having reported, Ramo calls Reykjavik.

"Let me speak to Colonel Day. This is Ramo."

"Just a moment, sir." One moment. "Day here."

"Things are all in order over here, Colonel. Have your salesmen reported yet?"

"All save two, as expected," he says: everyone but Peking and Kunming.

"Good. Everything is pretty much in your hands, then. I'm going to go down and do that commercial."

"Good luck, sir."

"We're past the need for luck. Be careful Colonel." He rings off.

Ramo shaves and dresses, white Palm Beach suit. The reflection in the mirror looks like somebody's grandfather; not long for this world, kindly but a little crotchety, a little senile. Perhaps a little senile. That's why Colonel Day is co-ordinating things in Iceland, rather than Ramo. If Ramo dies, Day can decide what to do. If Day dies, the bombs all go off automatically.

"Let's go," Ramo shouts into the adjoining room. His voice is still clear and strong.

Two men go down the elevator with him. One is the ex-hit man, with a laundered identity (complete to plastic surgery) and two hidden pistols. The other is Philip Vale, who carries with him all of the details of Project Blackmail and, at Ramo's suggestion, a .44 Magnum single-shot derringer. He watches the hit man, and the hit man watches everybody else.

The Cadillac that waits for them outside the Beachcomber is discreetly bulletproof and has under the front and rear seats, respectively, a Thompson submachine gun and a truncated 12-gauge shotgun. The ex-hit man insisted on the additional armament, and Ramo provided them for the poor man's peace of mind. For his own peace of mind Ramo, having no taste for violence on so small a scale, had the firing pins removed last night.

They drive to a network-affiliated television station, having spent a good deal of money for ten minutes of network time. For a paid political announcement.

It only cost a trifle more to substitute their own men for union employees behind the camera and in the control room.

15. Transcript

FADE IN LONG SHOT: RAMO, PODIUM, GLOBE

RAMO

My name is Howard Knopf Ramo.

SLOW DOLLY TO MCU RAMO

RAMO

Please don't leave your set; what I have to say is extremely important to you and your loved

ones. And I won't take too much of your time.

You've probably never heard of me, though some years ago my accountants told me I was the richest man in the world. I spent a good deal of those riches staying out of the public eye. The rest of my fortune I spent on a project that has taken me thirty years to complete.

I was born just twenty-one years after the Civil War. In my lifetime, my country has been in five major wars and dozens of small confrontations. I didn't consider the reasons for most of them worthwhile. I didn't think that any of them were worth the price we paid.

And at that, we fared well compared to many other countries, whether they won their wars or lost them. Still, we continue to have wars. Rather...

TIGHT ON RAMO

. . . our *leaders* continue to declare wars, advancing their own political aims by sending sons and brothers and fathers out to bleed and die.

CUT TO:

MEDIUM SHOT, RAMO SLOWLY TURNING GLOBE

RAMO

We have tolerated this situation through all of recorded history. No longer. China, the Soviet Union, and the United States have stockpiled nuclear weapons sufficient to destroy all human life, twice over. It has gone beyond politics and become a matter of racial survival.

I propose a plan to take these weapons away from them — every one, simultaneously. To this end I have spent my fortune constructing 29 atomic bombs. 28 of them are hidden in various cities around the world. One of them is in an airplane high over Florida. It is the smallest one, a demonstration model, so to speak.

CUT TO:

REMOTE UNIT; PAN SHORELINE

RAMO

VOICE OVER SURF SOUND

This is the Atlantic Ocean, off one of Florida's Keys. The bomb will explode seven miles out, at exactly 10:30. All shipping has been cleared from the area and prevailing winds will disperse the small amount of fallout harmlessly.

Florida residents within fifty

miles of Shark Key are warned not to look directly at the blast.

FILTER DOWN ON REMOTE UNIT

Watch. There!

AFTER BLAST COMES AND FADES

CUT TO:

TIGHT ON RAMO

RAMO

Whether or not you agree with me, that all nations must give up their arms, is immaterial. Whether I am a saint or a power-drunk madman is immaterial. I give the governments of the world three days' notice — not just the atomic powers, but their allies as well. Perhaps less than three days, if they do not follow my instructions to the letter.

Atomic bombs at least equivalent to the ones that devastated Hiroshima and Nagasaki have been placed in the following cities:

MCU RAMO AND GLOBE

RAMO

TOUCHES GLOBE AS HE NAMES EACH CITY

Accra, Cairo, Khartoum, Johannesburg, London, Dublin, Madrid, Paris, Berlin, Rome, Warsaw, Budapest, Moscow, Leningrad, Novosibirsk, Ankara, Bombay, Sydney, Peking, Shanghai, Kunming, Tokyo, Kyoto, Honolulu, Akron, San Francisco, New York, Washington.

The smaller towns of Novosibirsk, Kunming and Akron — one for each major atomic power — are set to go off eight hours before the others, as a final warning.

These bombs will also go off if tampered with, or if my representatives are harmed in any way. The way this will be done, and the manner in which atomic weapons will be collected, is explained in a letter now being sent through diplomatic channels to the leader of each threatened country. Copies will also be released to the world press.

A colleague of mine has dubbed this effort "Project Blackmail." Unflattering, but perhaps accurate.

CUT TO:

LONG SHOT RAMO, PODIUM, GLOBE

RAMO

Three days. Good-by.

FADE TO BLACK

16. Briefing

"They didn't *catch* him?" The President was livid.

"No, sir. They had to find out what studio the broadcast originated from and then get —"

"Never mind. Do they know where the bomb is?"

"Yes, sir, it's on page six." The aide tentatively offered the letter, which a courier from the Polish embassy had brought a few minutes after the broadcast.

"Where? Has anything been done?"

"It's in a public parking lot on 14th Street. The police —"

"Northwest?"

"Yes, sir."

"Good God. That's only a few blocks from here."

"Yes, sir."

"No respect for ... nobody's fiddled with it, have they?"

"No, sir. It's booby-trapped six ways from Sunday. We have a bomb squad coming out from Belvoir, but it looks pretty foolproof."

"What about the 'representative' he talked about? Let me see that thing." The aide handed him the report.

"Actually, he's the closest thing we've got to a negotiator. But he's also part of the booby-trap. If he's hurt in any way ..."

"What if the son of a bitch has a heart attack?" The President sat back in his chair and lowered his voice for the first time. "The end of the world."

17. Statistical Interlude

One bomb will go off if any of 28 people dies in the next three days. They will all go off if Ronald Day dies.

All of these men and women are fairly young and in good physical condition. But they are under considerable strain and also perhaps unusually susceptible to "accidental" death. Say each of them has one chance in a thousand of dying within the next three days. Then the probability of accidental catastrophe is one minus .999 to the 29th power.

This is .024, or about one chance out of 42.

A number of cautionary cables were exchanged in the first few hours, related to this computation.

18. Evening

The Secretary of Defense grips the edge of his chair and growls: "That old fool could've started World War III. Atom...bombing... Florida."

"He gave us ample warning," the Chairman of the AEC reminds him.

"Principle of the goddamn thing."

The President isn't really listening; what's past is over and

there is plenty to worry about for the next few days. He is chain-smoking, something he never does in public and rarely in conference.

"How can we keep from handing over all of our atomics?" The President stubs out his cigarette, blows through the holder, lights another.

"All right," the chairman says. "He has a list of our holdings, which he admits is incomplete." Ticks off on his fingers. "He will get a similar list from China: locations, method of delivery, yield. Chinese espionage has been pretty efficient. Another list from Russia. Between the three, that is among the three, I guess —" Secretary of Defense makes a noise. "— he will probably be able to disarm us completely."

He makes a tent of his fingers. "You've thought of making a deal, I suppose. Partial lists from —"

"Yes. China's willing, Russia isn't. And Ramo is also getting lists from England, France and Germany. Fairly complete, if I know our allies."

"Wait," says the secretary, "France has bombs too —"

"Halfway to Reykjavik already."

"What the hell are we going to do?"

Similar queries about the same time, in Moscow and Peking.

19. Morning

Telegrams and cables have been arriving by the truckload. The President's staff abstracted them into a 9-page report. Most of them say "don't do anything rash." About one in ten says "call his bluff," most of them mentioning a Communist plot. One of these even came from Akron.

It didn't take them long to find Ramo. Luckily, he had dismissed the bodyguard after returning safely to the Beachcomber, and so there was no bloodshed. Right now he is in a condition something between house arrest and protective custody, half of Miami's police force and large contingents from the FBI and CIA surrounding him and his very important phone.

He talks to Reykjavik, and Day tells him that all of the experts have arrived: 239 atomic scientists and specialists in nuclear warfare, a staff of technical translators and a planeload of observers from the UN's International Atomic Energy Agency.

Except for the few from France, no weapons have arrived. Day is not surprised and neither is Ramo.

Ramo is saddened to hear that several hundred people were killed in panicky evacuations, in Tokyo, Bombay and Khartoum. Evacuation of London is proceeding in an orderly manner. Washington is under martial law. In New York

and Paris a few rushed out and most people are just sitting tight. A lot of people in Akron have decided to see what's happening in Cleveland.

20. Noon

President's intercom buzzes. "We found Ramo's man, sir."

"I suppose you searched him. Send him in."

A man in shirt sleeves walks in between two uniformed MP's. He is a hawk-faced dark man with a sardonic expression.

"This is rather premature, Mr. President. I was supposed to —"

"Sit down."

He flops into an easy chair. " — supposed to call on you at 3:30 this afternoon."

"You no doubt have some sort of a deal to offer."

The man looks at his watch. "You must be hungry, Mr. President. Take a long lunch hour, maybe a nap. I'll have plenty to say at —"

"You —"

"Don't worry about me, I've already eaten. I'll wait here."

"We can be very hard on you."

He rolls up his left sleeve. Two small boxes and some wiring are taped securely to his forearm. "No, you can't. Not for three days — you can't kill me or even cause me a lot of pain. You can't drug me or hypnotize me." (This last, a lie.) "Even if you could, it wouldn't bring any good to you."

"I believe it would."

"We can discuss that at 3:30." He leans back and closes his eyes.

"What *are* you?"

He opens one eye. "A professional gambler." That is also a lie. Back when he had to work for a living, he ran a curious kind of a lathe.

21. 3:30 P.M.

The President comes through a side door and sits at his desk. "All right, you have your say."

The man nods and straightens up slowly. "First off, let me explain my function."

"Reasonable."

"I am a gadfly, a source of tension."

"That is obvious."

"I can also answer certain questions about that bomb in your backyard."

"Here's one: how can we disarm it?"

"That I can't tell you."

"I believe we can convince—"

"No, you don't understand. I don't know *how* to turn it off. That's somebody else's job." Third lie. "I do know how to blow it up — hurt me or kill me or move me more than ten miles from ground zero. Or I can just pull this little wire." He touches a wire and the President flinches.

"All right. What else are you here for?"

"That's all. Keep an eye on you, I guess."

"You don't have any sort of...message, any—"

"Oh, no. You've already got the message. Through the Polish embassy, I think."

"Come on now. I'm not naive."

The man looked at him curiously. "Maybe that's your problem. Mr. Ramo's demands are not negotiable — he really is doing what he says, taking the atomic weapons away from all of you ... strange people.

"What sort of a deal do you think you could offer an 80-year-old millionaire? Ex-billionaire. How would you propose to threaten him?"

"We can kill him."

"That's right."

"In three days we can kill you."

The man laughs politely. "Now you are being naive."

The President flips a switch on his intercom. "Send in Carson and Major Anfel and the two MP's." The four men come in immediately.

"Take this man somewhere and talk to him. Don't hurt him."

"Not yet," Carson says.

"Come on," one MP says to the man.

"I don't think so," the man says. He stares at the President. "I'd like a glass of water."

22. 15 October 1975

The only nuclear weapons in the United States are located in Colorado, Texas, Florida, and, of course, San Francisco, Washington, D.C., and Akron, Ohio.

23. 16 October 1975

2:30 A.M.

The only nuclear weapons in the United States are located in Colorado, Texas, Florida, San Francisco, and Washington, D.C. There is no Akron, Ohio.

Of the 139 who perished in the blast, 138 were very gutsy looters.

10:00 A.M.

Only San Francisco and Washington now. The others are on their way to Reykjavik.

The man who was named Andre Charvat walks down a deserted 14th Street with a 9-volt battery in his hand. A civilian and two volunteer MP's walk with him.

He walks straight up to the Econoline's rear bumper and touches the terminals of the battery to two inconspicuous rivets. There is a small spark and a click like the sound of a pinball machine, tilting.

"That's all. It's controlled by Reykjavik now."

"And Reykjavik is half controlled by Communists. And worse, traitors," Carson said huskily.

He doesn't answer but walks on down the street, alone. Amnesty.

In a few minutes a heavy truck rumbles up, and men in plain coveralls construct a box of boiler plate around the Econoline. People start coming back into Washington, and a large crowd gathers, watching them as they cover the box with a marble facade and affix a bronze plaque to the front.

The man who owned the parking lot received a generous check from the Nuclear Arms Control Board, in kroner.

24. Quote

"NUCLEAR WARFARE...This article consists of the following sections:

I. Introduction
II. Basic Principles
    1. Fission Weapons
    2. Fusion Weapons
III. Destructive Effects
    1. Theoretical
    2. Hiroshima and Nagasaki
    3. Akron and Novosibirsk
IV. History
    1. World War II
    2. "Cold War"
    3. Treaty of Reykjavik
V. Conversion to Peaceful Uses
    1. Theory and Engineering
    2. Administration Under NACB
    3. Inspection Procedures

(For related articles, see: DAY, RONALD R.; EINSTEIN, ALBERT; ENERGY; FERMI, ENRICO; NUCLEAR SCIENCES (several articles); RAMO, HOWARD K.; VALE, PHILIP; WARFARE, HISTORY OF."

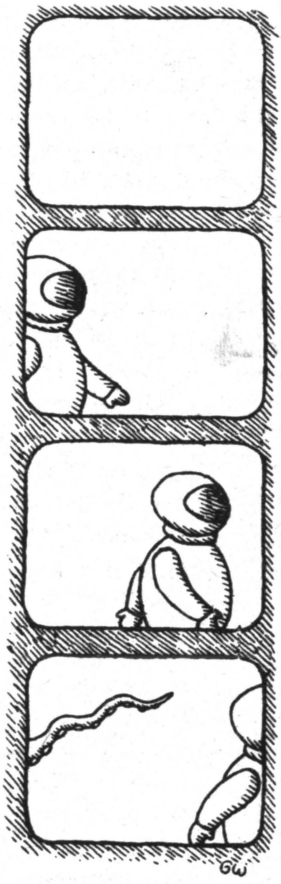
FLESH GORDON

Gather round, Kiddies. Uncle Bay is going to tell you about a pornographic film this month. Well, some people would consider it porn. My aunt Phoebe, probably. My father, assuredly. But compared to some home-made (or I should say motel-made) examples I've seen, this is raunch at its gentlest. There's a good deal of nudity, some of it full frontal female type. There's a fair amount of simulated sexual activity, usually confined to long shots. There are a great many sexual allusions that are suggestive in a simple minded way. But all in all, it's not likely to rouse the beast in you. It is, however, rated X, so don't plan for it to be the treat at your little darling's next birthday bash.

But what, you ask, is it doing in this column? Well, it's called *Flesh Gordon* and it's (if you hadn't gathered from the title) a send up of a sci-fi comic strip with a very similar name. And, believe it or not, quite a stylish one, which sets it apart from most others of its genre (porn films, that is, not sci-fi, though come to think of it, it holds true there, too). I gather it had a fairly sizeable budget, and it was well used. The filmmakers

BAIRD SEARLES

Films



have captured the *style* of the '40s serial remarkably well.

Flesh Gordon is the handsome son of a world famous scientist, who is studying the effects of a diabolic ray from somewhere in outer space which has turned most of the human race into sex fiends (it's a sexray, ho, ho). While returning from the ice skating championship matches in Tibet, Flesh's plane is struck by the awful thing, and, since the crew joins in the resulting orgy, Flesh must parachute to safety with a chance-met girl companion, Dale Ardent. They land on the grounds of a renegade scientist whose name you can figure out if you know the original (quite frankly, I'm playing coy because I'm not sure how much my friendly editor will let pass). Anyhow, Prof. J— has just invented an interspatial something or other, and they all set off to find the source of the terrible ray. It turns out to be the planet Porno, headquarters of the awful Emporer Wang. There's a great deal of pursuing back and forth, in the process of which Dale is captured by the feminist underground and doesn't quite miss a Fate Worse Than Death at their hands; the guys get equal time with Prince Precious, the rightful heir to Wang's throne, who persuades Flesh into some neighborly gestures. There are battles with various monsters, confrontations in Wang's court room (which is carpeted with wall-to-wall bodies, very much alive ones), a great deal of to-and-froing in rocket ships, and an ambivalent sorceress queen type who takes Flesh on a long ride in her aerial swan boat, and wills him her magic and all-powerful pasties when it crashes (Prof. What's-his-name wears and uses them with great efficacy).

Now all this would be simply sophomoric if it weren't visually so clever. The designers have perfectly captured the look of those papier-mache landscapes and tinker toy models that the original serial had (is there any point in specifying what the rockets and ray guns are specifically modeled to represent?). But in addition there are several sequences which are well able to stand on their own. There are two excellent monsters: one a sort of metallic mantis man as convincing as anything Harryhausen has ever done (and who keeps trying karate chops at Flesh); the other a giant semi-satyr who carries Dale up the side of a tower and is very cool and laconic, muttering things about black silk stockings. There's also some semi-animated stuff which is very charming: the swan boat sailing along the Zodiac, the tree houses of the exiled Prince Precious and his band of merry —er— gay men. It's

really jolly good fun and I hope you're old enough to get in to see it.

A note to my feminist readers — this is a very sexist movie. But considering the model on which it's based and its general good humor, try to forgive.

From the reblime to the subdiculous ... I caught *Yellow Submarine* again the other night on TV. If animated film *must* be confined to the whimsical with music, let it always be like this. However, I saw part of it on a b&w set and found it to be almost meaningless. If you saw it under those conditions and couldn't quite figure out why it wasn't as good as when you saw it in a theater, color in this case makes a really direct difference.

Literary department...Vol. 3 (P-Z) of Walt Lee's prodigious "Reference Guide to Fantastic Films" (science fiction, fantasy, horror) is now available. No point in rehashing my admiring burbles, but two quick notes: the selection of stills (about one every other page or so) is really superb, and I personally find the set invaluable for everything from arcane reference to late-show-viewing-guide. It can be got at $9.95 (complete set of three $29.40) from Walt Lee, PO Box 66273, Los Angeles, CA 90066...Avon has published David Pirie's "A Heritage of Horror: The English Gothic Cinema 1946-1972," in other words, a study of the renaissance of the horror film in England since WW II. While I disagree with Mr. Pirie on several points (as in his dismissal of the quite well done "The Day the Earth Caught Fire"), on the whole it's an intelligent (in fact, close to intellectual) work, full of facts and insights, and also wonderfully illustrated with many photographs.

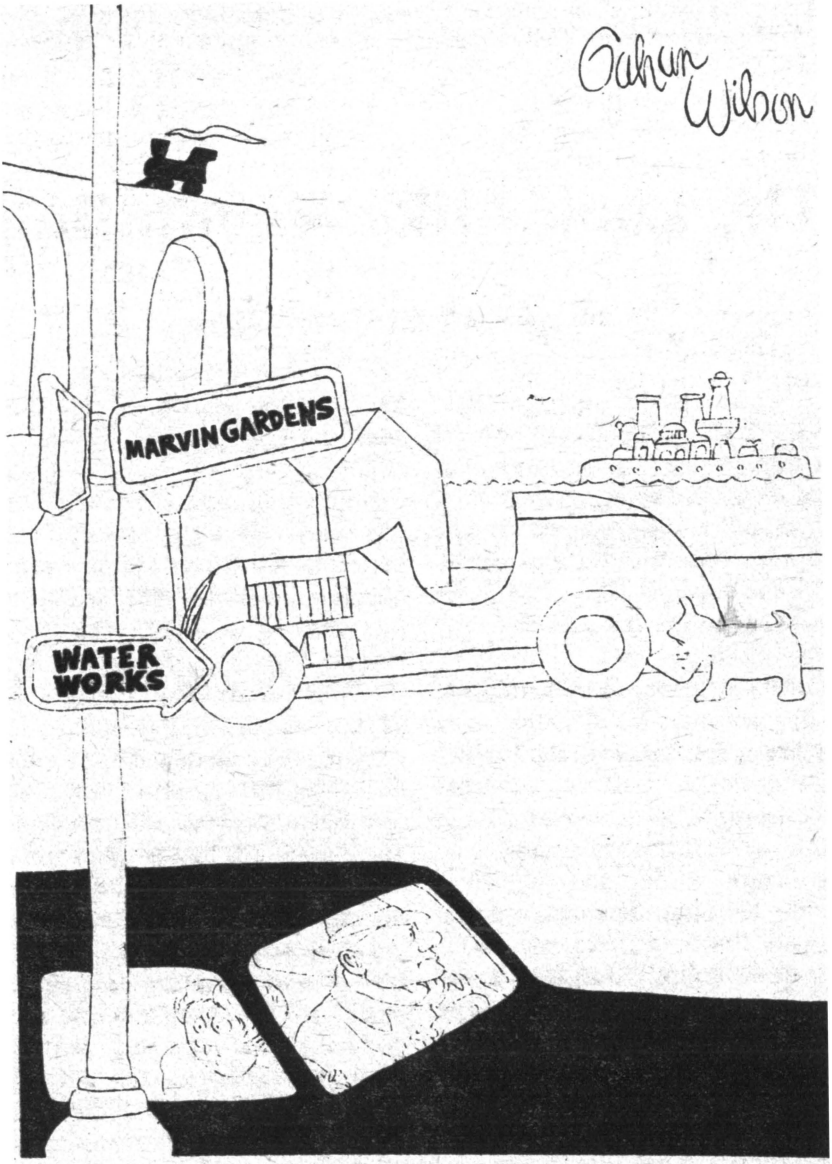
Producer Dan Curtis, who was responsible for the incredible Gothic soaper "Dark Shadows," now seems to be determined to refilm for TV all the classic horror stories. He's done a Dr. Jekyll, a Frankenstein, a Dracula, and a Dorian Grey; his latest is a new production of *The Turn of the Screw*, starring Lynn Redgrave and shown in two parts on ABC.

On the surface, this does not seem such a bad idea. Henry James wanted success as a playwright, something he never achieved. It would seem that the problem was simply that he was born a century too early; his *milieu* would ideally have been the leisurely-paced, several-part TV serial format, or so it would seem from the brilliant TV dramatizations of his works that have been recently imported from England. But TTotS has some special problems attached; not only is it even subtler and more reliant on innuendo than most of James'

work, but there has been already a feature film made from it — Jack Clayton's "The Innocents," one of the great horror films of all time, so far as I'm concerned.

The new version, like most of Curtis' productions, was never really bad and Redgrave, in fact, was a great deal more than competent. But this story of two angelic children who may or may not be under the influence of the malignant ghosts of a pair of debauched servants has to be subtly done, and that is the quality that was notably lacking, both in the script and in the filming. And there was one outstanding flaw which was really unforgivable. The boy, Miles, is described in the novel as "just 10." Here he was portrayed as a 14-year-old, which gave the underlying sexual vibrations of his relationship with the governess as entirely different and highly unJamesian character.

I'd suggest waiting until "The Innocents" is shown on TV again, but, unfortunately, that is one film that simply does not work on the tube. Its steady build of suspense can not take the commercial interruptions.



"I've the strangest feeling I know *this place!"*

In which Nobel laureate Emmett Duckworth engineers a political dirty trick to end all dirty tricks, only slightly more incredible than the newspaper headlines of the past couple of years.

The Look Alike Revolution

by LARRY EISENBERG

It all seemed innocent enough. The President, as an act of political courage, refused to leave even after the Senate had voted to remove him from office. His appeal to the Supreme Court seemed to immobilize that august body. And so for the time being, the President was hanging on.

The following week, an open letter was sent to all major news and television media declaring that a non-violent and unpredictable political action was now underway. This action, it said, would only terminate when the President finally left office. It was signed, the LALR.

The President waved his hand when the letter was called to his attention. However, the following day, he appeared unexpectedly with his wife and two daughters, all decked out in Sunday finery, at the Black Muslim Mosque on Avenue Q in Washington D.C. The Muslims were stunned at first but when the President and his family removed their shoes, they were promptly admitted. The President was carrying a worn copy of Malcolm X's autobiography prominently displayed. The first lady was wearing a FREE ANGELA button. After salaaming all around, the First Family slipped back into its shoes and quietly departed.

The following day, a news item describing the surprise visit was distributed over all wire services. There were unbelieving gasps from suburban communities all over the country. The news item was promptly denied by the White House press secretary as a base canard. The members of the Mosque, when apprised of this statement, expressed their outrage at the denial of something they had all seen with their own eyes. The uproar and counter uproar went on for weeks thereafter.

The following week, garbed in neatly checked plus fours, the President appeared at the Municipal golf links in Turnipgreens, Virginia. He was accompanied by his good friend, Bobo Mendozo, Jeramiah Robin the ex-Yippie, and Shirley Dimple, former child star. Several foursomes were brushed to one side to let the Presidential party play through. Afterward the President smilingly refused to autograph his score card which showed that he had almost broken one hundred on the first nine holes.

The following day the White House again issued a denial of this purported appearance of the President. In fact, it said, he and Bobo Mendozo were fishing at that very moment off the Florida Keys. The Press Corps was puzzled by this denial and deeply confused. Two of its members decided to look into the apparent contradiction. They flew down to Florida and arrived in time to see the President and his dear friend leaving the yacht, The Impossible Dream. The President held up a large tuna he had personally landed.

All of the crew members swore that the President had been at sea for the past three days. The mystery was impenetrable. Who had been at the Golf links at Turnipgreens?

The following morning, the President and his wife were seen pushing an umbrella topped Frankfurter cart along Pennsylvania Avenue. While vending franks, they shook hands with tourists and chatted amiably. Before the Secret Service could get its men over to protect the unguarded Chief Executive, the pair and their cart had disappeared. A telephone call to Florida confirmed that the President was still there.

All of the awesome resources of the many Federal intelligence services were put to work to unravel this curious mystery. Under the direct guidance of General Biff Cranshaw, Presidential Aide who had been a Staff Sergeant only a year earlier, these resources were coordinated. Reports were sifted from all parts of the country and, it seemed, the President and members of his family *had* appeared unexpectedly in several other spots, usually in compromising situations.

General Cranshaw rubbed his fingers against the blue black bristles that seemed to defy a razor as he read through the intelligence reports. At times he felt as though he were in the middle of an inchoate nightmare. Once he pinched himself and winced. But there before him, memo pad at the ready, was his buxom secretary, Ms. Olive Genation. The proximity of that heaving bosom convinced him that he was awake.

"Olive," he said at last, hoping to cull something out of his secretary's undisputed woman's intuition, "you've seen all of these reports. What do you make of them?"

Olive nibbled at the end of her pencil.

"I've seen other reports, too," she said. "For example, financier David Merriweather ostensibly appeared at a board meeting of his Bank and demanded that all loans to apartheid South Africa be terminated immediately. His family swears that he was in Canada at the time. King Weisal of the oil soaked kingdom of Weisi Arabia declared yesterday at a London press conference that all of his oil profits were to be distributed to the poor of his country. It later turned out that the King hadn't left his harem in Weisi Arabia."

"Then both of these men were impostors?" asked the General.

"Indisputably," said Olive.

She uncrossed her knees and recrossed them on the other side. The General sighed at the brief glimpse of her milk white thighs.

"Moreover," added the General, "a streaker had his ski mask forcibly removed at Delaney's Women's College in Billings, Montana. The face beneath the mask was uncannily like that of our President."

At that moment the twin sister of his secretary seemed to come into the office. The seated Ms. Olive and the standing Ms. Olive stared at one another for a brief moment. And then the seated figure arose, adjusted her skirt, and in a dignified unhurried manner walked out of the office. The General stared after her, observing the rotating buttocks with pounding heart before it dawned on him that something was amiss.

"Stop her!" he cried but by the time the real Ms. Olive ran into the outer office, the spurious Ms. Olive was gone. For the first time in his life, the General was in a state of panic.

"My God," he cried. "Even in here? Is nothing secure, Ms. Olive?"

But Ms. Olive was staring at a second General Biff Cranshaw who had just come into the office.

It was Ramsay Plunkett, blue jeaned and bearded undercover Fed agent and Research Associate in Radical Tax Evasion at Merriweather University who first stumbled upon the six identical chimpanzees in the animal room of Emmett Duckworth, reknowned Nobel laureate. The ambient aroma was rich and ripe, composed as it was of bits of sawdust, orange rinds, rancid banana peels and chimp waste matter.

As he attempted to decipher the

cramped writing in one of Dr. Duckworth's notebooks, he felt a bony hand on his right shoulder. Turning, he discovered that the tiny black eyes of Dr. Duckworth were fixed on his own.

"What an elegant piece of work," said Plunkett effusively. "Although I'm not sure how it's done, yet. Did you use cloning?"

"Not at all," said Duckworth. "They were all *conditioned* to look the same."

"Conditioned?" exclaimed Plunkett. "How?"

"Have some tea," said Duckworth. "Brewed from leaves. No tea bags."

He handed Plunkett a cup, which was sipped at reflectively.

"Have you ever noticed," asked Duckworth, "how people who live together get to look alike? It happens because they tend to imitate one another's facial muscle set. I decided to see if I could reproduce this phenomenon among chimpanzees. First I selected a young male. I carefully analyzed his facial muscle set. After working out a complete map of his little hairy face, I chose a second male of similar build who was to become his look-a-like. I now placed surface electrodes at ten points on the face of both Chimps and compared muscle potentials at each electrode. Whenever they were identical, I rewarded the second Chimp with a banana. Within two weeks time, he had learned to selectively contract his facial muscles so that he became a virtual twin to the first chimp. I repeated this experiment with four other chimps and you can see the results for yourself."

"With amazing success," said Plunkett. "But even more important, I was wondering if you could do the same with people."

"Were you indeed?" asked Duckworth. "What a curious coincidence! The fact is, I have done it with people."

"Why not?" murmured Plunkett, half to himself. "But how could it be done if the subject himself weren't physically accessible?"

"Like, say, the President?" asked Duckworth.

Ramsay chuckled nervously.

"Like the President."

"By careful and detailed study of photographs of the President, his facial muscle set would become readily known. I could then select a male of similar build and have a computer monitor ten muscle site potentials on his face. An audio tone would then tell him whenever he matched the facial set of the President exactly."

"What's his reward? Bananas?"

Duckworth chuckled.

"Not bad," he said. "Of course there are other rewards, particularly

to a research scientist whose funds have dried up because an unrepentant scoundrel has made the government grind to a halt. Such a subject would be pretty highly motivated, you must admit."

"There must be a lot of them," mused Plunkett.

It seemed to him that Duckworth nodded in agreement, and then, abruptly, he lost consciousness.

The extraordinary Cabinet meeting was held under the most stringent security measures ever invoked. Even the President had to strip for body mark identification, and finger and toe prints had to be corroborated before anyone could get into the Cabinet meeting room. When the doors were finally closed, each man and the sole woman present eyed one another speculatively. Finally the President spoke.

"I think that all of us here are now who we say we are."

He drew a deep breath, wiped the burgeoning sweat off his upper lip and resumed.

"As far as I know, this crisis is unparalleled in the history of this country. Some group or groups have worked out a sneaky method for bedeviling our government. In some unfair but effective way they produce innumerable look alikes who can't be distinguished from the real article. In this fashion, nobody can be perfectly sure whom he's talking to."

He looked about the oval table.

"Even now," he said, "after all of our precautions, I still have some doubts about whether each and everyone of you is really a Cabinet member."

"Cabinet *person*," said Secretary Edna Peabody.

"Cabinet person," said the President grudgingly.

He scowled at Ms. Peabody.

"After this meeting," he said, "we are going outside to meet with the Press in a body. I insist that each one of us radiates one hundred percent confidence. There must not be the slightest doubt in the minds of the American people but that we have the situation tightly under control."

With the meeting over, the President led his Cabinet on to the White House lawn to personally direct the Press conference. He learned that the Press Corps had departed, quite intrigued by the unorthodox conference *already* held with the President and his Cabinet.

"Already held?" cried the President in anguish.

"Intrigued by the *unorthodox* conference?" cried Secretary Edna Peabody.

"Of course," said a minor White House attendant. "They seemed stunned by the President's

announced plans for draft evader amnesty, socialization of the Oil industry, and elimination of all tax loopholes."

It was unfortunate that no members of the Press were still about to record the ex tempore remarks of the President.

The emergency session of Congress, called by the President to give him the power necessary to deal with this crisis, received unprecedented television coverage. The 435 House members filed in, followed by the 100 Senate members. But then 435 more House members arrived and 100 more Senate members, all carbon copies of the original arrivals. And then yet another 435 and yet another 100 pushed in. Soon thousands of legislators, real and pseudo, milled about the historic halls. The National Guard was called out and two brigades appeared to face one another, each made up of identical featured members. The two officers-in-charge glared at each other angrily and narrowly avoided a fist fight.

To this day, it is unclear whether or not the man who was hospitalized at Walter Reed Hospital with a nervous breakdown was truly the real President. Suffice it to say that with the former Vice President sworn in to the Chief Executive's office, the Look-a-Like Revolution seemed to end. Ramsay Plunkett, the undercover agent, awoke to find himself seated at a Debutante's Ball in a pink velvet tuxedo. Hastily shedding this conservative attire, he returned to the campus of Merriweather University and forced his way into Duckworth's animal room. He found the aroma of the room unchanged, but all six of the chimpanzees looked disturbingly different.

For a while he wondered if it all hadn't been a bad dream, the result of an ill managed orgy involving buttermilk pancakes in an erotically novel way. It was only Mao Tse-Tung's announcement a few months later that Beethoven was his favorite composer (later denounced by the Peking press as a bourgeois canard uttered by an impostor), that made Ramsay sit up straight and wonder if everything hadn't really happened as he recalled it, after all.

J. Michael Reaves is a new writer who lives in Alabama. His first story for F&SF is a fantasy about a young couple stranded in a Southern town that is somehow different . . . even sinister.

The Century Feeling

by J. MICHAEL REAVES

The accident happened just outside of Hallisville, Mississippi. I was halfway between Hallisville and the roadside rest where Annalee and the hibachi stove waited for groceries when a combination of wet road and a sharp curve laid me across a highway barrier. A concrete pylon went through the side door of the van, and that was it for the rest of the trip.

I came out without a scratch — the only pain was in seeing that beautiful car crumpled like tin foil. There was nothing else to do but trek into town and use my last fifteen bucks for a tow truck, which I did. It was an easy walk, through green, rain-fresh farmland — even under the circumstances, I could appreciate the beauty of the countryside. I tossed a thumb at a few cars without any luck; rides come few and far between for longhairs this far south. Eventually I topped a hill, and there was Hallisville in front of me.

I expected a typical "passing through" town — a wide space in the road where all the tourists see are the gas stations or the traffic court. Instead, old plantation-style homes that looked like Tara before Sherman marched lined wide brick streets shaded by magnolia trees. It was early evening, and there was a particular lazy warm country feeling in the air that made me think of fireflies and mint juleps. I stopped and listened, took a deep breath. The sound of bees, and the smell of honeysuckle ... for just a moment, I felt a deep, timeless summer nostalgia, a caress of twelve-year-old times. Then it was gone, and I started looking for a garage.

The tow trucker picked up Annalee at the rest stop, and then dragged our broken steed back to the garage. It was a dirt-floored tin cavern littered with rusting blocks

and disembodied trannies. The air reeked of the thirty-weight oil. One of the mechanics looked the van over, and said, "Can't do it for less'n two hundred." It was a fair price, and a pleasant surprise; gross overcharging for minimal service had been the rule below the Mason-Dixon, usually with dirty looks at my long hair and beard, or Annalee's pregnancy and lack of wedding ring. I was impressed. Unfortunately, we couldn't afford to cover the hole with Reynold's wrap.

Annalee was in her eighth month. We'd intended to be back in San Francisco in time for the stork — now, however, it looked like we were stranded.

"We should have had it aborted, Joel," Annalee said.

"Abortion is murder," I said. "Thought so then and I think so now." If you take a stand, stand on it, even if your nose is being rubbed in it. She had been right, I suppose, but it was too late to think about it now. I looked at the mechanic, who stood grinning beside the van, one hand against a painted Middle-Earth dragon. "Know where I can get a job?" I asked.

We could have sold the van, I suppose, and taken a bus to the Coast. I didn't want to; a lot of work and love had gone into making it something individual, something beyond just transportation. It would have been like selling a relative to white slavers.

Instead, we rented an apartment for seventy a month. The landlord gave us no trouble about our not paying the first month's advance. In fact, he lent me ten until I could find a job. People seemed friendly in Hallisville. A walk down the street brought smiles and nods from old folks puttering in flowerbeds, handwaves from burly crew-cut types. Annalee didn't like it.

"It's almost frightening," she said, looking out the window at the street below. The sun was just setting behind a large ramshackle general store down the street. "Everything here seems so — *old.*"

"Really?" I started unpacking. "It has just the opposite effect on me. Reminds me of those beautiful barefoot summers back in the grade-school years."

Annalee stared down at Hallisville, at the brick street, the lilac bushes. "That's just it. Nothing *moves.* There's a —" She made motions with her hands, trying to shape the words out of the golden air. " —A century feeling to it all. Know what I mean?"

"Well," I said, not really answering, "just keep telling yourself that there's a reason for us being here. Everything has a reason."

She laughed. "Joel, Joel. Just one time, can't we have a bad break and nothing more? Life isn't always a series of beautifully structured cadences. Leave room for a few accidents."

I believe in a meaning to life — Annalee believes in the cosmic giggle. "Don't you feel," I asked, "that somewhere, somehow, it all has to come together? That maybe someone can fit the pieces into place, explain it all for you? Someone's got to be to blame for this," and I swung my arm around to gather in the apartment, Hallisville, the world.

"Well, if you find him, I want his head on a platter," she said.

The local county clinic gave Annalee about a month — time enough to get a job and start bringing some money in. I was certain the hair and beard would have to go, but I was wrong; I picked up employment right away, loading and moving produce trucks. Nobody said a word about my appearance, even though the rest of the crew were uniformly shaved to the occipital ridge. Instead, they were easygoing, friendly, as was everybody in Hallisville.

It was hard work — I dollied crates, carried crates, loaded crates for a long backbreaking eight hours. I came in for my share of razzing, but it was all geared toward being new on the job, rather than being a hippie pervert. There was one other new man on the crew, a black named Benjamin Ryan. He got by far the worse treatment, the "invisible man" status that reduced him to an order-taking automaton. He didn't like it, took it with a hint of resentment that stopped just short of hostility. But at the last minute he would always swallow his anger, push it down, and grab a crate as it rumbled down the line.

At the end of the day, while we were taking skin and dirt off our hands with pumice soap, one of the crew memebers invited me to the local bar for a few drinks with the boys.

"There's a bar on the edge o' town where the waitresses got the biggest bazooms you ever seen. C'mon along, it'll do you good." His name was Harris Crewster — he was a short, burly good old boy in his middle twenties. He'd been loading crates for almost five years and would no doubt go on loading them until he was ready to retire.

• "Thanks, but no," I said. "I got a lady at home who's expecting. Some other time." I was slightly unsure of Hallisville's down-home hospitality. I could see Ryan standing by himself at the edge of the loading dock, waiting for the bus. The workers leaving parted around him, none coming very

close. Crewster grinned, said, "Any time you feel like it," and shook my hand. Why should their prejudices exclude longhairs? His grin showed yellow teeth, and I noticed that his eyebrows grew together in a black bushy ridge over a nose that had been broken several times. At that moment, he looked not even vaguely human, not even so close as *Pithecanthropus erectus*. Still, he was friendly, so I smiled back.

"You gonna fit in," he said.

It having been a long day, I didn't feel up to walking across town to the apartment. I decided to take the bus.

Hallisville had only one bus route, a circuitous one that wound through almost every street in town. When I got on, it was filled with day laborers, straps in one hand and lunch pails in the other. I stood near the back, watching the town go by. The route went through the west end of Hallisville, the poor end. The black end.

We rode on streets without curbs, almost without asphalt, dust and chuckholes and gravel. On both sides of the street were unpainted houses and sagging fences, brown sketchy grass and cars sitting on blocks. I watched it go by behind the dirty fly-specked bus window, seeing it as though through a cheesecloth veil that blurred out the details, leaving only the abstract word Poverty.

Three months spent in Georgia, Alabama, Mississippi — it wasn't like I hadn't seen it before. But I had never seen it this bad. I knew ... old black men sat on front stoops, in sofas with protruding springs. Women stood in doorways, holding babies, watching with flat eyes as the bus rumbled by. What was it like, I wondered, to sit in an old house for a time measured in years and watch the buses go by, watch your life flicker out?

I thought of times spent in Watts and Oakland, in the ghettos there. In the inner cities they were usually beaten before they started, but at least they cared, they *tried*. It meant riots, burning, dying — but at least it was a bid to break free, it was caring. Here, they did not seem to care.

I was so repelled and fascinated by the sight of them, men, women and children caught like flies in amber, that on a sudden impulse I grabbed the dirty nylon cord above me and pulled it. I felt that I had to see it without that softening haze of dirty glass in the way. I had to convince myself it was real.

The bus lurched over to the side of the road. As the cracked rubber joints of the metal doors folded back, I remembered a sequence from George Pal's production of "The Time Machine"; the chronometer numerals spinning, slowing, stopping at a date...

Somewhere around the turn of the century, or before. Eighteen Seventy, I thought. The beginning of the Restoration period, when people were beginning to go through the motions of living again. I looked around. No cars, not even ruined hulks on blocks; the earliest gas-powered cars had not been invented in Europe. Overhead, the evening sky was empty of phone lines — the telephone would be invented in 1877. In 1870 the Ku Klux Klan still rode at night, terrorizing the blacks. I looked at the few people sitting on porches and in doorways. None of them showed any hostility, or even curiosity, at what a white was doing in their neighborhood. Thoughts of black communities in San Francisco, in New York, were dim and unreal. This was 1870.

I watched the bus rumble away, an anachronism disappearing into the dusk. For just a second, I caught a glimpse of Ryan's face against one of the windows, watching me. Then it was gone, they were all gone, and there was nothing left to link me with 1973.

I realized that I didn't know my way back to the east end of town. I looked about for someone who might give me directions and spotted an old man sitting in a rocker on a sagging tumbled-down veranda across the street. I could see his wrinkled skin dimly in the evening light, and he looked at least seventy or eighty. I started across the street, and as I got closer to the house, something in the way he sat without rocking in a rocking chair said he was older, eighty-five or ninety, that age where all useless motion is conserved. I walked up to the front porch, and from there I could see watery blue eyes. It was the eyes that convinced me. He was a very old man, the oldest I'd ever seen. Maybe the oldest there was.

He was white — it was hard to tell, because his skin was tobacco-colored, mottled with liver spots, and he was bald. Only those eyes, and their flat blue gaze, said he was white. I took a deep breath, and smelled that very faint scent of tarpaper and kerosene that is always just noticeable around the edges of poverty and age.

Age evokes a veneration in me. History has always been my passion, and what history this old man must have seen! What Presidents had he voted for, what wars had he fought in, what famous events had he known first-hand that I could only know from a text? Immediately I thought of a hundred questions to ask him. But I remembered Annalee and looked at my watch. Six thirty, I cleared my throat and asked him if he knew the way back to Grand Rapids Street.

I had spoken softly, but he

heard me. His grin was the yellow of piano keys. "You lost then, I take it." His voice was a bit more than a whisper, but not the rasp of a cancerous larynx. "Well, it a long way over to the tracks, 'bout two mile if I 'member correct — I ain't had 'casion to walk it for a number of years.

"They first laid the tracks for that there railroad 'bout 1869. Just 'bout the time I got my papers dismissin' me from Lee's army." His voice was so quiet, and so in keeping with the man and his surroundings, that it was a moment before what he said registered. Some of the soldiers in the Civil War had been in their early teens — even so, that made him at least a hundred and twenty. He kept talking, and I listened. The soft whisper was drowned out at times by the doppler buzzes of June bugs — I sat down on the porch, intent on what he had to say. His name, he said, was Hiram Fitts. And he told me of various experiences:

"I met Sam Colt once ... saved his life, as a matter of fact. It was on board — I disremember the name — anyhow, we was bound for Calcutta from Boston, and I saw 'im take a tumble overboards and went in after him. He never forgot it. Ten year later he sent me one of his pistols when they were still bran' new."

Samuel Colt, I remembered, had gotten the idea for his revolving pistol on a voyage taken in 1830. I thought of an even earlier event, and asked slowly, "Do you remember the war with England, around 1812?"

"I 'member it. I didn't fight in it. I was living in Chicago, I think, when the Indians attacked the fort. Killed 'most everybody, I recall ..." He had to be talking about Fort Dearborn.

I was fascinated, to put it *very* mildly. I asked him more questions probing gently, pushing his memory further back. He had a vague recollection of hearing about "that expedition up the Missouri," headed by Lewis and Clark. He was, as nearly as I could estimate, almost two hundred years old.

Before I knew it, it was night, the moon rising silver over the old house. I had listen to the old man talking for hours, that easy quiet voice murmuring without a break all that time. yet he did not sound tired. I apologized, finally, for keeping him up so late. He chuckled — the sound of a Delphic oracle laughing at mortal words — and said, "Well, I don't get too sleepy no-mores ... seems I gets by with less nowadays. Some nights I don't sleep at all."

"Mr. Fitts —" I hesitated, then decided what the hell — "Do you have any idea just how old you are?"

He was quiet for some time. Finally, "I been asked that before, I remember, more'n oncet. Fact it's been so long since the last *time* they asked me that I can't rightly call to mind what I told then. I guess," he said, after a pause, "—I guess that makes me pretty goddamn old."

I followed the route he had told me to take, back to the tracks and the east end. Through various strata of dates — here a 1935 Ford, there a poster reading "Vote for Truman," there a Fifties-style O'Keefe and Merritt washer sitting on a back porch...

I came into the apartment with boots in hand to keep Annalee from waking up. She hadn't been asleep. Sitting quietly on the sofa, hands clasped around her bulging dress, she said simply, "Hallisville must have a batter night life than we thought."

I knew she would understand, would believe me if I told her what had happened, but I didn't know how to tell it. I knew I had to explain it in just the right way, or none of what happened would make sense. I remembered asking her, "Don't you feel that maybe someone can fit the pieces into place, explain it all for you?" Everything has a reason. Annalee, wouldn't you understand if I told you of this old man, this old old man who made me feel, for just a moment, that it was all coming together? Couldn't you understand? No. You couldn't.

Things were quiet for a long moment. Then the alarm clock went off, loud in the stillness. Six a.m. I looked at my watch, reflexively; it said six thirty. The second hand was still. It had stopped last night.

As I swallowed cornflakes and got ready for work, I tried to explain about the old man.

"Do you believe him?"

Until she asked, I hadn't thought about *not* believing him. "Yes and no," I said, slowly. "I believe that he's old, very old. When he talked, I believed the whole line — he could have told me he held the patent on the wheel. You'd have to see him to believe him, Annalee. He's — adjectives fail me. He's *old.*"

"I'd like to see him," she decided. "It would be nice to just — well, pay my respects to anyone who's lasted that long. Or maybe I'm just glorifying the same emotion that makes money for freak shows. Anyway, I'd like to see him."

No. "Be hard to swing it," I listened to myself saying, while inside I wondered at that instinctive gut-level refusal I felt at the thought. "Walking's out of the question, and believe me, you don't want to ride on that bus." But it was more than the pregnancy ...

She changed the subject. "How's the job?"

"Great. No problems. People are so friendly here, never a discouraging word, never a 'get a haircut' look."

"I've noticed. Isn't it odd? People I've known for years don't come on as strong as strangers do here. I should be happy we're not getting bricks through the window, but —" she frowned. "Somehow, it's sinister."

"I don't think so. It's like that old-time Southern hospitality my parents used to talk about. I like it."

"If they're so friendly here," she said, "why don't they do something about the west end?"

"Well, that ..." An idea that would explain it all came for just a second, was gone before I could get it out. I shook my head. "Beats the hell out of me."

When I kissed her good-by and left, she said, "Joel? Did you say he was white?"

"Yeah. Only white I saw in the neighborhood."

"Isn't that odd," she said again.

Usually, I detest physical labor, but today was different. I stood beside the loading dock, catching crates of produce as they came off the belt, and tossing them to Crewster in the truck. I felt like it could keep working for days — hook gloved fingers into the wire wrapping, swing it off the belt, up and around to Crewster, turn and grab the next one, and on and on ... I felt like I was part of the belt — a team feeling, and I dug it. The crates rumbled down over the steel rollers, down to my hands, and I would grab them and yank up and out, feeling back muscles stretch and kinks work out. My hair was dripping sweat, and my tie-dyed shirt was plastered against my skin, and everything was fine.

Lunch break came before I knew it. As I walked out of the hot sunshine into the coolness of the loading dock, it was like pulling a plug — my legs went rubber and I half sat, half fell into a tailor squat. I blinked my eyes — I was light-headed with fatigue, and yet everything looked, felt, sounded, smelled so *clear.* I could see the tiny pores and cracks in the grey cement, and the rust-brown paint peeling from the side of the truck. I could feel the coolness of the dock soaking through my pants and skin. I could hear the laughter and jokes — "Y'all heard *this* one?" — behind the warm buzzing of blood in my ears. I could smell the ripe green scent of the crated vegetables mingling with sharp whiffs of perspiration. My skin was tingling. Hyperventilation — I was on an oxygen high. I let myself go over

backward, the rough cement pressing my damp shirt against my back, and closed my eyes.

"Shit, boy, y'all a goddamn *machine* out there!" I heard Crewster sit down beside me, but kept my eyes closed, watching the orange highlights. He clapped a hand on my shoulder. "Hey, y'all right? Been workin' pretty hard out there."

"Yeah. Fine."

"Well, c'mon in and eat — ain't much left of the hour." I rolled over and onto my feet, and followed him.

A few minutes before the lunch hour was up, while I was waiting for the conveyor belt to start up — "Cunliffe, can I talk to you for a minute?" Ryan sat down beside me.

"Yeah, man, what?"

"How long you been in Hallisville, Cunliffe?"

"Little less than a week."

Ryan glanced about, looked pensive. Finally he said, "Let me tell you something 'bout this town. Blacks and whites here, they just don't give a damn what each other does, long as they leave each other alone. Now, I ain't sayin' that's good. You seen very many blacks in this end of town? Ain't any, hardly. None of us on the city council, none own business in the east end, and ain't but 'bout half know how to read and write their names." He talked in a low rapid tone, staring at his spatulate fingers. "There's been people from the N-Double-A-CP, from CORE, out here who try and — well, make people *move*, make the blacks try'n change those slums ..." he shook his head. "It don't do no good. Black people in Hallisville just don't seem *interested* — they just satisfied to go on livin' the way their fathers and grandfathers did." He stopped, and glanced at me. "Some of try'n break out," he said.

I knew there was *something* I should say, something that was the right response, the thing he wanted to hear. But I wasn't sure ... encouragement? Sympathy? I didn't know what to say. I simply stared at him, and slowly, almost sadly, his eyes got hard. The silence stretched out thin and taut — then he exhaled a short, hard breath. "Guess you ain't really interested though." His glance flicked for just an instant at my hair. "Thought maybe you might be." He walked away.

I felt like I'd ruined something — but why should I? I hadn't asked him to tell me about the west end. I had tried all day not to think about the west end, not to remember those pathetic little shanties, those skinny kids playing with sticks in the dirt, thost dull bored eyes that were all the worse for *not* having the slightest spark of resentment as

they looked at me. Don't come to *me* with your troubles, Ryan.

I went back to work, but that good cathartic feeling was gone. There's a reason for it all, I found myself thinking, over and over. The heavy weight of kismet — I wanted so much to believe that the west end had its place in the universe.

Damn you, Ryan, I thought.

Crewster and some of the others wanted me to have a few beers with them again. Not tonight, I said. All I wanted to do was sleep. I didn't want to take the bus, but I wasn't up to the long walk back. I managed to snag a seat, huddled up against the hard brittle leather. I didn't want to go back through the west end again, and I shut my eyes ...

—I woke up with a sudden feeling of urgency, reached up before I thought about it and pulled the cord. The bus stopped, and I got off quickly.

My fatigue was gone. I felt quiet, content. Everything was as it had been yesterday, as it had been for ... how long? Old Fitts sat on his porch, in his rocking chair. Had he moved at all? Had I?

I took a slow stroll across the street, stopped and sat on the bottom step. "Evening, Mr. Fitts," I said.

I stopped and talked with him every evening, on the way home. There was something hypnotizing in his ancient voice, a compelling quality that kept me interested in hearing him. His mind was burdened with the tonnage of more than two lifetimes of recollections; his memory was vague and disjointed; he repeated himself, wandering erratically from one faded yellow photo of times past to another. Some things were hard to accept, such as when he told me that not everyone had been massacred at the Alamo, that he and Jim Bowie had rode together to Wyoming, where Bowie had married and settled down. But I never disbelieved him. In those Tom Sawyer-summer evenings, it all range true.

"Grant was throwin' shells through Vicksburg all through the summer o' Sixty-three ... I remember we had to live in holes we dug from the clay 'cause the houses looked like tin cans hit with buckshot. Meat was two hundred 'n' fifty dollars a pound."

I learned about the Donner Party — he had known a man who had survived — and heard of the distant rumble of thunder and the darkening at midday that was Krakatau. He showed me newspaper clippings, brittle with age, of Samuel Clemens's editorials. The inside of his house was dark-brown with age, the air dry and musty, the furniture indistinct shapes in

lightless corners. Sitting in a straight-back chair in the yellow light of a kerosene lamp, Fitts took me through the past.

I learned about the Ku Klux Klan:

"Yes, I rode with 'em. I was a member 'till Forrest said there wasn't no more Klan, in Sixty-nine, but they was still ridin' late as Seventy or thereabouts. I ain't ashamed of it — the nigras was rapin' and lootin' and terrorizin' so that decent folk were scared to walk at night. We kept 'em in line, was all.

"Now those of 'em in Hallisville, they're pretty decent sorts — they don't make any trouble, if you know what I mean. I been living here for I don't know how long, and I ain't been bothered."

I could understand why. In the evening dusk, and the quiet air, I could almost hear the horses's hooves as they carried the hooded riders, torches blazing, ropes tied in hangman's knots. I shuddered, but despite the repulsion, I was fascinated — that perverse delight in the unspeakable. I felt the prickling at the back of my neck, and in the dim aged light, Fitt's eyes glittered like cold stone.

And he told me about lynchings at night, of tar-and-feather punishments on both blacks and whites who consorted with blacks; about the time he had led a raid on a Georgia whorsehouse, whose white women had been receiving blacks, and burned it to the ground, watching while the harlots and their johns leaped from second-story windows, their clothes and hair burning.

I felt so at *peace* listening to him, at the center of everything, filled with the certainty that the world came together here. It was as though I sat at the feet of a guru, coming closer and closer to an understanding ...

"Joel? Joel?" I blinked, looked up — Annalee was sitting across from me in the apartment. She looked troubled and was watching me closely. "Joel — what day is today?"

I thought and realized with something of a shock that I had no idea. The morning sun was rich and golden through the window, and it had to be Sunday because I wasn't working, but as for the date — "I don't know."

"Neither do I," she replied. We hadn't talked much in the last few days. I'd usually come in late, too tried to do anything except sleep. "One day is so much like another here — they all blend in. I feel like I've been here forever. San Francisco seems like a dream. Don't you feel like that?"

"No," I said. "No."

"Do me a favor? Tomorrow, don't stop to talk to the old man."

The idea was surprisingly distasteful. "But Annalee — you can't believe how much I'm learning from him. He's told me things I've never found in a textbook. Look, did you know that Jim Bowie —"

"How do you know that rap of his isn't just bullshit?"

"It's not." I snapped the words.

"Joel, this town *scares* me. There's such a sleepy, lazy feel to it. People run in a rut here, over and over, for their whole lives. Don't you feel that?"

"No! I've got no complaints. Everyone is very friendly here—"

"That's what I mean! Remember when you said it was like the old-fashioned hospitality your parents used to talk about? Nobody puts you down because of your hair — maybe they don't know what a longhair is! Joel, don't you get the feeling that if you stay here much longer, you'll forget what year this is?"

I said, in what I hoped was a calm easy voice, "No, I don't. Sure this is a dull place, but it's still 1973, honey. Will be until next year." She looked at me, on the verge of crying; something very unusual for Annalee. And there was nothing more I could say — no words would come. *I love you, Annalee,* I thought. But she looked so unfamiliar ...

"Look, tomorrow I won't stop to talk to the old man. I promise." I looked at her anxiously. "Okay?"

"Okay," she said, quietly.

I was beginning to grow used to my job, toughening to it. It was an easy, soothing process that didn't require much thought, grabbing crates and tossing them, blinking sweat out of my eyes, a routine that was easy to fall into. Crewster had brought a few beers — they went down cold and creamy during lunch, although I usually don't care for beer. We had a regular little party. The only one who didn't seem happy was Ryan.

"Y'all gonna fit in," Crewster told me again, as I chug-a-lugged a beer down without stopping for air.

At the end of the day I got my check. I finally had enough money to pay the repair bill on the van. It was a long walk over to the garage — I could pay it tomorrow on my day off, or do it now. As I walked out of the loading plant, the bus pulled up, and I got on. I would pay the bill tomorrow — too tired tonight.

Again, the bus followed its route, like tracing the rings in a tree stump back to the heartwood. At the right point in space and time, I pulled the cord and got off. It wasn't until after the bus had gone that I remembered my promise to Annalee. Somehow, it didn't seem a matter for concern — it was something far away, said in

another time. Anyway, I would only chat with Fitts for a minute and then hustle back. She'd never know I stopped.

"Now, the nigras 'round here, they got it pretty good, all in all. And they know it — I've seen others more uppity by far. I never really thought of myself as quittin' the Klan, y'see ... that's why I stays here, 'stead of moving somewheres else. They need a white man 'round here, sort of keeps them rememberin' their place, if you know what I mean. Been here for more years'n I can count, now, and things stay pretty much the same."

There was such a placidity about him, such a calmness. He lived in the center of a clear still pool, and time seemed to eddy about him, slowly. Take him from the west end, from Hallisville, and the town, not he, would crumble to ash.

And before I knew it, it was night, with the moon high in the sky.

"I've got to go, Mr. Fitts," I said. "I'm late."

He cocked an incredibly deep blue eye at me. "I'll give you some advice, boy. Don't y'all worry 'bout the *time*. Don't think 'bout all those minutes slidin' by, and they don't have any effect. If you remember *that*, boy — you might be as old as me, someday."

The apartment was quiet when I got in. I was too tired, for some reason, to even make it to the bedroom. I crashed on the couch instead.

I woke up with the sun warm across my face, I went into the bedroom; Annalee was still in bed, eyes open, staring at the ceiling.

"I'm sorry," I said.

"'Sorry,'" she repeated.

"Look, I—" I stared at her, thin face framed by blonde hair, the huge swell of her pregnancy rising under the quilt that she had bought on Haight Street years ago, when everything had been peace and love. "I don't—" The entire scene looked strange to my eyes, as if I were seeing for the first time something described by another person.

I knew that there was one right thing to say, one right way to say it, that would make everything okay. One word was all I needed to begin — after that, it would all come out, it would all be explained, and she would smile and say, It's cool, everything's cool, and she wouldn't be a stranger any more.

But I didn't know how to begin.

Anyway — she hadn't met the old man. She didn't know what an incredible rush came from hearing him talk, what a peaceful feeling it was to sink back through the years, back to where there was no threat of nuclear war, no pollution, no riots by angry blacks.

"Look, what do you want me to do?"

She slammed her hands down on the quilt, pulled herself into a sitting position. "How about a little moral support once in a while? It was your idea to have the baby! *You* didn't want to have it aborted! Well, how about keeping in touch once in a while, just so I won't have to hitchhike to the maternity ward?"

"I've been working my ass off just so you won't have to have that kid by the side of the road!" The words came fast and hot now. "I've been paying the rent and keeping food in the kitchen. Isn't that enough?"

All the anger seemed to go out of her. "Okay, that's it. Get the hell out of here, Joel — go talk to that old man about the Crimean wars or some damn thing. Just leave me alone for a while, okay?"

It was in that instant that I knew why I hadn't wanted her to meet old Fitts. I believe in a meaning to life ... Annalee believes in the cosmic giggle.

She wouldn't have believed in him.

I walked over to the garage and paid the bill on the van. They had done a fine job of patching it up, of course. I gave it a good workout, cruising the west end. I was looking for Fitts's house.

It was the first time I had been in the west end during the day, and it was depressing. All the seedy, raunchy aspects of it were magnified by the bright sunlight — I bumped and cursed my way through the chuckholes, got lost in the twisting, narrow alleys that passed for streets, and never did find the old man's house. The place was different, unfamiliar, and the people I stopped to ask didn't seem to know what I was talking about. They would look at me with a dumb, uncomprehending gaze that infuriated me. After a while I gave up asking directions and headed back home.

I drove up Grand River Street, past the old-fashioned storefronts — some merchants were rolling their awnings down to keep the afternoon sun from shining in. The tires vibrated slightly on the brick paving of the street. The breeze was sultry, and as I passed the candy-striped-painted pole of a barber shop, I suddenly remembered how much cooler it had been in the summers of years ago, when I had been a kid and worn a crew cut.

Someone was sitting on the outside steps as I pulled into the parking lot of the apartment building. It was Crewster — he grinned at me, as I stopped the van, and said, "They took you old lady to the hospital. Seems like the baby's on its way. She called the

plant when the cramps started, tryin' to find you. I said I'd wait for you and give you the news."

The baby, I thought. She was having the baby. "Where's the hospital?" I asked; I had been there before with her, but suddenly I wasn't sure. There was an air of unreality to it all. I knew I should go to her as soon as possible, but somehow there didn't seem to be any rush.

The sun was just below the horizon, filling the air with dim golden light. Crewster walked over to the van, ran his hand over the new-painted surface approvingly. "She gonna be all right," he said. "Ain't nothin' you can do to help them deliver the baby, is there now? Best thing is to take you mind off it. How 'bout having a few beers out at that bar I told you 'bout?"

There was the sound of bees in the warm summer air, and I could smell, faintly, the scent of honeysuckle. The breeze grew stronger, stirring annoying strands of long damp hair into my face.

"Why not?" I said.

SKEWERED!

I don't write many mathematical articles in this series, and for a very good reason. I don't have a mathematical mind, and I am not one of those who, by mere thought, finds himself illuminated by a mathematical concept.

I have, however, a nephew, Daniel Asimov by name, who *does* have a mathematical mind. He is the other Ph.D. in the family, and he is now an Assistant Professor of Mathematics at the University of Minnesota.

Some years ago, when he was yet a student at M.I.T., Danny had occasion to write to Martin Gardner and point out a small error in Gardner's excellent "Mathematical Recreations" column in *Scientific American.* Gardner acknowledged the error and wrote me to tell me about it and to ask a natural question. "Am I correct in assuming," said he, "that Daniel Asimov is your son?"

Well! As everyone knows, who knows me, I am only a little past thirty right now, and was only a little past thirty at the time, some years ago, when this was taking place. I therefore wrote a letter to Gardner and told him, with some stiffness: "I am not old enough, Martin, to have a son who is old enough to be going to M.I.T.

ISAAC ASIMOV

Science

Danny is the son of my younger brother."

Friends of mine who have heard me tell this story keep assuring me that my statement involves a logical contradiction, but, as I say, I do not have a mathematical mind, and I just don't see that.

And yet I must write another mathematical article now because over eleven years ago I wrote one* in which I mentioned Skewes' number as the largest finite number that ever showed up in a mathematical proof. Every since then, people have been asking me to write an article on Skewes' number. The first request came on September 3, 1963, almost immediately after the article appeared. On that date, Mr. R. P. Boas of Evanston, Illinois, wrote me a long and fascinating letter on Skewes' number, with the clear intention of helping me write such an article.

I resisted that, along with repeated nudges from others in the years that followed, until September 3, 1974 when, at Boskone 11 (a Boston science fiction convention at which I was Guest of Honor), I was cornered by a fan and had Skewes' number requested of me. So I gave in. Eleven years of chivvying is enough. **I am Skewered.

First, what is Skewes' number? Not the numerical expression, but the significance. Here's the story as I got it from Mr. Boas (though I will paraphrase it and if I get anything wrong, it's my fault, not his).

It involves prime numbers, which are those numbers that cannot be divided evenly by any number other than themselves and one. The numbers 7 and 13 are examples.

There are an infinite number of prime numbers, but as one goes up the list of numbers, the fraction of those numbers that are prime decreases. There is a formula that tells you the number of primes to be found in the list of numbers up to a given number, but like everything else about prime numbers the formula is not neat and definite. It only tells you approximately how many primes there will be up to some limiting number.

See T-FORMATION, August, 1963

***I'll admit that I've been chivvied longer than that in some respects. For seventeen years I have been requested, with varying degrees of impatience, to write another Lije Baley novel; and for over twenty years to write another Foundation novel. So please don't anybody write letters that begin with "If eleven years of chivvying is enough, why don't you---" Because I'm doing all I can, that's why.*

Up to the highest limit that has actually been tested, it turns out that the actual number of primes that exist is somewhat *less* than is predicted by the formula.

In 1914, however, the British mathematician, John Edensor Littlewood, demonstrated that as one lengthened out the string of numbers which one investigated for primes, one would find that up to some limits there would indeed be less than the formula predicted but that up to other limits there would be more than the formula predicted.

In fact, if one continued up the line of numbers forever, the actual total number of primes would switch from less than the formula prediction to more than the formula prediction to less than the formula prediction, and so on — and make the switch an infinite number of times. If that were *not* so, Littlewood demonstrated, there would be a contradiction in the mathematical structure, and that, of course, cannot be allowed.

The only trouble is that as far as we have actually gone in the list of numbers, not even one shift has taken place. The number of primes is always less than the formula would indicate. Of course, mathematicians might just go higher and higher up the list of numbers to see what happens, but that isn't so easy. The higher one goes, the harder it is to test numbers for prime-hood.

However, it might be possible to do some theoretical work and determine some number below which the first switch from less than the prediction to more than the prediction *must* take place. That will at least set a limit to the work required.

Littlewood set S. Skewes (pronounced in two syllables by the way, Skew'ease) the task of finding that number. Skewes found that number and it proved to be enormously large; larger than any other number that ever turned up in the course of a mathematical proof up to that time, and it is this number which is popularly known as Skewes' number.

Mind you, the proof does not indicate that one must reach Skewes' number before the number of primes shifts from less than the prediction to more. The proof merely says that some time *before* that number is reached — perhaps long long before — the shift must have occurred.

Naturally, a number as large as Skewes' number is difficult to write. So a shorthand device must be used, and the device used is the excellent one of exponential notation.

Thus, 1,000 = 10 X 10 X 10, so 1,000 can be written as 10^3 ("ten to the third power") where the little 3 is called an "exponent." The little 3 signifies that 1,000 can be considered the product of three 10s, or that it

can be written as a 1 followed by three 0s. In general, 10^x ("ten to the xth power) is the product of x 10s and can be written as a 1 followed by x zeroes.

Since 10,000,000,000 is written as a 1 followed by 10 zeroes, it can be written exponentially as 10^{10} ("ten to the tenth power"). In the same way a 1 followed by ten billion zeroes, something that would be impractical to write, can be easily expressed exponentially as $10^{10,000,000,000}$ ("ten to the ten billionth power"). But since ten billion is itself 10^{10}, $10^{10^{10}}$ can be written, even more briefly, as $10^{10^{10}}$.

Writing exponentials is always a strain when an article is being written for a non-specialized outlet. This is especially so when one is forced to place exponents on exponents. To avoid driving the Noble Printer crazy, and to make the notation look prettier, I have invented a notation of my own. I make the exponent a figure of normal size and it is as though it is being held up by a lever, and its added weight when its size grows bends the lever down. Thus, instead of writing ten to the third power as 10^3, I will write it as 10/3.

In the same way, ten to the ten billionth power can be written as 10/10,000,000,000, or as 10/10/10.

Using this "Asimovian exponential notation," Skewes' number becomes 10/10/10/34.

Now let's see what Skewes' number might be in ordinary non-exponential notation. To do that we must consider the components of the exponential notation from right to left. Starting at the right, we know what 34 is, so we move leftward and consider 10/34. This is ten to the thirty-fourth power and can be written as a 1 followed by 34 zeroes, thus: 10,000,000,000,000,000,000,000,000,000,000,000, or, in words, ten decillion (American style). This means that Skewes' number can be written 10/10/10,000,000,000,000,000,000,000,000,000,000,000.

So far, so good, if a bit disconcerningly formidable. The next step is to move one place to the left and ask how we might write: 10/10,000,000,000,000,000,000,000,000,000,000,000. Easy! You just put down a 1 and then follow it by ten million billion billion billion zeroes.

If you were to try to write such a number by beginning with a 1 and then writing ten decillion zeroes, each the size of a hydrogen atom, you would require nearly exactly the entire surface of the Earth to write the number. Furthermore, if you wrote each zero in a trillionth of a second and kept it up at that rate without cessation, it would take a thousand trillion years to write the entire number.

Anyway, let's call this number the "Earth-number" because it takes the Earth as a blackboard to write it, and imagine that we can write it. Now we can write Skewes' number as 10/Earth-number, and this means we now know how to write Skewes' number in the usual fashion. We start with a 1 and then follow it with an Earth-number of zeroes.

This is tremendously more than the ten decillion zeroes it took merely to write the Earth-number. A number itself is much greater than the number of zeroes it takes to write it. It takes only one zero to write 10, but the result is a number that is ten times greater than the number of zeroes required to write it. In the same way it takes ten zeroes to write 10,000,000,000, but the number written is ten billion, which is a billion times greater in size than the number of zeroes used to write it.

Similarly it takes only ten decillion zeroes to write the Earth-number, but the Earth-number itself is enormously greater than that number of zeroes.

To write not ten decillion zeroes, but an Earth-number of zeroes, would require far more than the surfaces of all the objects in the known Universe, even with each zero the size of a hydrogen atom. A trillion such Universes as ours might suffice, and that is just to *write* Skewes' number in a 1 followed by zeroes. Skewes' number itself written by a 1 followed by an Earth-number of zeroes, is itself *enormously,* ENORMOUSLY greater than the Earth-number that suffices to count those zeroes.

So let's forget about counting zeroes; that will get us nowhere. And if we abandon counting zeroes, we don't need to have our exponents integers. Every number can be expressed as a power of ten, if we allow decimal exponents. For instance, by using a logarithm table, we can see that $34 = 10/1.53$. So instead of writing Skewes' number as 10/10/10/34, we can write it as 10/10/10/10/1.53. (Such fractional exponents are almost always only approximate, however.)

There are some advantages to stretching out the large numbers into as many 10s as is required to make the rightmost number fall below 10. Then we can speak of a "single-ten number," a "double-ten number," a "triple-ten number" and so on. Skewes' number is a "quadruple-ten number."

We can't count objects and reach Skewes' number in any visualizable way. We can't count zeroes, either, and do it. Let us instead try to count permuations and combinations.

Let me give you an example. In the ordinary deck of cards used to play bridge, there are 52 different cards. (The number 52 is itself a "single-ten number" as are all the numbers between 10 and 10,000,000,000; 52 = 10/1.716.)

In the game of bridge, each of four people is dealt thirteen cards. A player can, with equal probability, get any combination of thirteen cards, and the order in which he gets them doesn't matter. He rearranges that order to suit himself. The total number of different hands he can get by receiving any 13 cards out of the 52 (and I won't bother you with how it is calculated) is about 635,000,000,000. Since this number is higher than ten billion, we can be sure it is beyond the "single-ten number" stage. Exponentially, it can be expressed as 6.35 X 10/11. Logarithms can help us remove that multiplier and put its value into the exponent at the cost of making that exponent a decimal. Thus 6.35 X 10/11 = 10/11.80. Since 11.80 is over ten, we can express that, exponentially, as 11.80 = 10/1.07.

Consequently, we can say that the total number of different hands a single bridge-player can hold is 10/10/1.07. Using only 13 cards, we have, in a perfectly understandable way, reached a "double-ten number." We might almost feel that we were half way to the "quadruple-ten number" that is Skewes'.

So let's take all 52 cards and let's arrange to have the order count as well as the nature of the cards. You begin with a deck in which the cards are in some certain order. You shuffle it and end with some different order. You shuffle it again and end with another different order. How many different orders are there? — And remember that any difference in order, however small, makes a different order. If two orders are identical except for the interchange of two adjacent cards, they are two different orders.

To answer that question we figure that the first card can be any of the 52, the second any of the remaining 51, the third any of the remaining 50 and so on. The total number of different orders is 52 X 51 X 50 X....4 X 3 X 2 X 1. In other words, the number of different orders is equal to the product of the first fifty-two numbers. This is called "factorial 52" and can be written "52!".

The value of 52! is, roughly, a 1 followed by 68 zeroes; in other words, a hundred decillion decillion. (You are welcome to work out the multiplication if you doubt this, but if you try, please be prepared for a long haul.) This is an absolutely terrific number to get out of one ordinary deck of cards that most of us use constantly without any feeling of being

overwhelmed. The number of different orders into which that ordinary deck can be placed is about ten times as great as all the subatomic particles in our entire Milky Way Galaxy.

It would certainly seem that if making use of 13 cards with order indifferent lifted us high up, making use of all 52 and letting order count will do much better still — until we try our exponential notation. The number of orders into which 52 different cards can be placed is 10/68 = 10/10/1.83.

That may strike you as strange. The number of orders of 52 cards is something like a trillion trillion decillion times higher than the number of bridge hands of 13 cards; yet while the latter is 10/10/1.07, the former is only 10/10/1.83. We're still in the "double-ten numbers" and we haven't even moved up much.

The trouble is that the more tens we add to such exponential numbers, the harder it is to move that rightmost component. For instance, a trillion is ten times as great as a hundred billion and counting a trillion objects would be an enormously greater task than counting a hundred billion. Write them exponentially, however, and it is 10/12 as compared with 10/11, and the rightmost components are only a unit apart. Write 12 and 11 as powers of 10 so that you can make use of "double-ten numbers" and a trillion becomes 10/10/1.08, while a hundred billion is 10/10/1.04 and the difference is scarcely noticeable.

Or put it another way. The number 10/3 (which is 1,000) is ten times as high as 10/2 (which is 100), but the degree to which 10/10/3 is greater than 10/10/2 would require a 1 followed by 900 zeroes to be expressed. As for comparing 10/10/10/3 and 10/10/10/2, I leave that to you.

This is downheartening. Perhaps reaching the "quadruple-ten numbers" won't be that easy after all.

Let's try one more trick with 52 cards. Suppose each of the cards can be any card at all. Suppose the deck can have two tens of diamonds or three aces of clubs, or, for that matter 52 threes of hearts. The total number of orders of such a chameleon-like deck could be calculated by imagining that the first card could be any one of 52, and the second card could be any one of 52 and so on for all 52. To calculated the number of different orders you would have to take the product of 52 X 52 X 52 X....52 X 52 X 52; fifty-two 52s. This product which could be written 52/52 I might call "superfactorial 52," but if I do, I would be using a term I have just made up, so don't blame the mathematicians.

Superfactorials are immensely larger than factorials. Factorial 52 can

be expressed by a 1 followed by 68 zeroes; but superfactorial 52 is a 1 followed by 90 zeroes, ten billion trillion times higher. Yet express it exponentially and superfactorial 52 = 10/90 = 10/10/1.95.

No good. We're still in the "double-ten numbers"

We'll just have to forget playing cards. We must have more than 52 units to play with, and we had better go all the way up; *all* the way up.

A generation or so ago, the British astronomer, Arthur S. Eddington, calculated that the total number of electrons, protons and neutrons in the Universe was 10/79, or 10/10/1.90. This number is arrived as if we suppose that the Sun is an average star, that there are about a hundred billion stars in the average galaxy and a hundred billion galaxies in the Universe.

In addition to electrons, protons and neutrons, of course, there are numbers of unstable particles unknown to Eddington, but their numbers are comparatively few. There are, however, massless particles such as neutrinos, photons and graviton, which do not generally behave as particles, but which are very numerous in the Uniterse.

If we wish we can suppose that the number of massless particles speeding through space at any time is nine times the number of massed particles (probably a grievous overestimate) and make the total number of subatomic particles in the Universe 10/80, or 10/10/1.903.

Now, at least, we are starting with a "double-ten number," and that ought to do it. Skewes' number, here we come. All we have to do is take the superfactorial of 10/80, something we can express as (10/80) / (10/80). Working that out (and I hope I'm doing it correctly) we get 10/10/81.9, or 10/10/10/1.91.

And that lifts us into the "triple-ten numbers" for the first time. In fact, if we compare the superfactorial of the total number of subatomic particles in the Universe, which is 10/10/10.1.91, and Skewe's number which, as a "triple-ten number" is 10/10/10/34, we might think we were almost there.

We need to begin with something more than the number of subatomic particles in the Universe — how about the amount of space in the Universe?

The smallest unit of space we can conveniently deal with is the volume of a neutron, a tiny globe that is about 10/-13 centimeters in diameter; or one ten-trillionth of a centimeter.

The Observable Universe has a radius of 12.5 billion light-years, or

1.25 X 10/10 light-years and each light-year is equal to just under 10/13 kilometers. Hence, the Observable Universe has a radius of roughly 10/23 kilometers. Since 1 kilometer = 100,000, or 10/5 centimeters, the Observable Universe has a radius of roughly 10/28 centimeters. From this we can calculate the volume of the Observable Universe to be roughly equal to 4.2 X 10/84 cubic centimeters.

A neutron with a diameter of 10/-13 centimeters, has a volume that is equal to roughly 5 X 10/-40 cubic centimeters. That means that the volume of the Observable Universe is roughly 2 X 10/124, or 10/124.3 times the volume of a single neutron.

Suppose we call the volume of space equal to that of a neutron a "vacuon." We can then say that there are 10/124.3 vacuons in the universe, and call that the "vacuon-number."

The vacuon-number is nearly a billion billion billion billion billion times greater than the number of subatomic particles in the universe, so we can feel pretty confident about the superfactorial of the vacuon-number, which is (10/124.3) (10/124.3), except that this comes out to 10/10/10/2.10.

Despite the vastly greater quantity of empty space than of matter in the Universe, the rightmost component of the "triple-ten number" went up only from 1.91 to 2.10, with 34 as the goal. That's enough to depress us, but wait —

In considering the number of vacuons in the Universe, we imagined it as existing at a moment in time. But time moves, and the Universe changes. A subatomic particle that occupies one place at one moment may occupy another place at another moment. The most rapidly moving particles are, of course, the massless ones which move at the speed of light.

The speed of light is just about 3 X 10/10 centimeters per second, and the smallest distance one can move with some significance is the diameter of a neutron, which is 10/13 centimeters. A photon will flash the width of a neutron, then, in about 3 X10/-24 seconds. We can consider this the smallest unit of time that has physical meaning and call it the "chronon"*

For a long period of time, let's consider what we can call the "cosmic cycle", one period of expansion and contraction of the Universe (assuming

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**Stanley G. Weinbaum once imagined space and time quantized in this fashion in one of his science-fiction stories, and used the word "chronon" for his ultimate particle of time.*

it is oscillating). Some have guessed the length of the cosmic cycle to be 80,000,000,000 or 8 X 10/10 years.

The number of chronons in one cosmic cycle, than, is roughly 10/42.

In every chronon of time, the Universe is slightly different from what it was in the preceding chronon, or what it will be in the next chronon, because, if nothing else, every free-moving photon, neutrino, and graviton has sifted its position by the width of one neutron in some direction or other with each chronon that passes.

Therefore we might consider the total number of vacuons not only in the present Universe, but in the one that existed in the last chronon, the one that will exist in the next chronon, and, in general, all the Universes in all the chronons through a cosmic cycle. (To be sure, the expansion and contraction of the Universe alters its vacuon content, these increasing in number with expansion and decreasing with contraction, but we can suppose that the present size of the Universe is about average.)

In that case, then, the total number of vacuons through every chronon of the cosmic cycle is just about 10/166.3. What this means is that if you wish to place a proton somewhere in the Universe at some instant in time, you have (under the conditions I've described) a choice of 10/166.3 different positions.

But if you take the super-factorial of this enormous "total-vacuon number", you end up with 10/10/10/2.27.

We have hardly moved. I just can't seem to move those "triple-ten numbers" and make progress toward Skewes' number. I am Skewered.

In fact, it's worse than that. According to Mr. Boas, Skewes' determination of Skewes' number depended on the supposition that something called the "Riemann hypothesis" is true. It probably is, but no one has proved it to be so.

In 1955, Skewes published a paper in which he calculated the value of the number, below which the number of primes *must* be higher at some point than the formula would predict, if the Riemann hypothesis were *not* true.

It turns out that the Riemann-hypothesis-*not*-true case yields a number that is far higher than Skewes' number. The new number, or what I suggest we call the Super-Skewes' number is 10/10/10/1000, or 10/10/10/10/3.

Super-Skewes' number and Skewes' number are both "quadruple-ten numbers"—10/10/10/10/3 and 10/10/10/10/1.53 respectively — and the difference in the rightmost component seems to be small. However,

you saw what difficulty there was in budging the "triple-ten numbers" upward — well, moving the "quadruple-ten numbers" upward is far harder still, and Skewes' number is virtually zero in comparison to Super-Skewes' number.

If I had reached Skewes' number, I would still have had Super-Skewes' number ahead of me. I would have been Super-Skewered.

In which Messrs. Harrison and Malzberg consider the consequences of a science fiction writer who is suddenly able to play god. Far-reaching visionary consequences, you might think...

The Whatever-I-Type-Is-True Machine

by HARRY HARRISON and BARRY N. MALZBERG

We do tend to look upon unsolicited gifts with a certain amount of suspicion, rightly enough I suppose, for we have all been taught early that the article received for nothing is worthy of that. Though this is indeed a more recent development in our history: there was a time, wasn't there? when gifts from the gods were both expected and enjoyed. A universal desire can be traced through all religions to expect something for nothing or rather from a bit of prayer and sacrifice, both being easy to do, not time consuming, and offering relaxation as well as a measure of satisfaction just for the performing thereof.

But that was long ago. Besides, the gods are dead. Both facts were firmly in hand when the bulky package was delivered by the mail truck, no receipt requested, and the return address, in a sort of smoky gold, read only GOD. Very funny. With a natural suspicion, I suspected an explosive bomb, a stink bomb, someone's garbage, turds in newspaper in the Brazilian tradition, as would have anyone else, and this as well gives us a certain insight into our times. With the utmost circumspection, using long sticks tipped with bent wire, I succeeded in unwrapping this mysterious object which proved to be a typewriter.

It was steam powered, which is a writer's humorous way (I am a writer) of saying that it is manual, something that I have not seen or used in years. I find that an electric machine performs much better and causes the prose to sparkle the merrier in my case because of the more powerful circuitry installed between brain and fingers. I

wondered at once, being chronically short of money (through no fault of my own) if I might possibly sell it. But it was of no make that I recognized and, while in good condition, was obviously secondhand. Not only secondhand, but in the same smoky gold as the lettering on the package, was a marring row of Spencerian handwriting inscribed across the front.

I bent close and blinked at it, for it seemed to waver and avoid the eye. However, I did succeed in making it out.

WHATEVER I TYPE IS TRUE

it said. Very reassuring. Someone had indeed gone to a great deal of trouble to prepare this joke, and I wondered just what it was all intended to mean.

At the same time I wondered if it could possibly be true. Writers' minds are always ready to accept the most outrageous and bizarre ideas, perhaps being more willing to accept them than simple straightforward conceptions of human existence.

So what if it *were* true? A fine thought that, and even while I first entertained the possibilities of this proposition, my fingers were, Pavlovian reflexwise, slipping a piece of paper into the machine. Were it but true, what would be the first truth from the machine.

Money. That was an easy one. Smiling indulgently, I typed:

STANDING AND STRETCHING, HARRISON WENT TO THE FRONT DOOR AND OPENED IT TO BRING IN THE MORNING MILK. THE MILK WAS NOT THERE. IN ITS PLACE WAS A BROWN PAPER ENVELOPE. WHAT COULD THIS MEAN? HE WONDERED. HAVE I NOT PAID MY BILL? MUST I, NOW ROCK-BOTTOM BROKE, SCRATCH UP A MISERABLE FEW DOLLARS TO FEED THE BLOATED OCTOPUS OF THE NOTORIOUS DAIRY TRUST?

— I must control an understandable but limiting tendency to overwrite. Foolishness —

HE OPENED THE ENVELOPE AND DREW OUT FIVE CRISP, MINT FRESH, OBVIOUSLY LEGAL TENDER AND NOT FORGERIES DEFINITELY NOT FORGERIES HUNDRED DOLLAR BILLS.

Whatever I type is true indeed! There was only about half an inch of Scotch left in the bottle, and I drank this down neat to wash the taste of hope — or was it fear? — from my mouth. Wiping my lips with the back of my hand, sneering at my childishness as I so wiped, I went to the front door and opened it.

Of course there was no milk there. I do not have milk delivered. Instead, there was a brown envelope upon the mat.

I stared, Harrison stared, I recoiled slightly, looked around with guilt to find no one in sight, then grabbed up the envelope, closed and locked the door, and tore it open.

Five crisp hundred dollar bills, indubitably negotiable.

During my lifetime, I have had a great number of orgasms (some of them even pleasant), have been hit by a truck and have driven a car into a large maple tree. So I am no stranger to sudden bursts of emotion, changes, heightening of sensation, what was at one time called being possessed by joy. Or fear. I have also experimented with drugs for the experience and gotten very sick on bad hash.

But none of these equalled the swelling burst of sensation that gripped and shook me then. *God*, the address had said, *God*, not *from* God but *to* God. *Me!* Everything. All mine.

My heart thudded and hammered inside my chest as though it would burst the bone and I would die, and this produced in turn a fear of death greater than any that had possessed me when I was nearly mortal. Shuffling slowly, breathing shallowly, I moved to the typewriter, rolled the paper up a few inches and wrote —

— PERHAPS ONE THING PEOPLE DID NOT REALIZE ABOUT HARRISON WAS THAT INSIDE HIS MODEST EXTERIOR THERE WAS A CONSTITUTION OF PURE IRON. A HEART STRONGER THAN AN ATHLETE'S, LUNGS LIKE A MOUNTAIN CLIMBER, MUSCLES OF GREAT RESILIENCE, WHITE BLOOD CORPUSCLES ABLE TO CONSUME ANY DISEASE ALMOST INSTANTLY, ANTIBODIES AGAINST ALL VIRUSES —

— that would do for the moment. Already I felt much better. The world was mine to enjoy as I willed. Without problems or *molestias*, without the petty feuds of petty writers to annoy me.

Without people like Barry N. Malzberg.

Well, why not? This was no ordinary writers' feud, they are to be sneered at, but was an affair of some weight. There was no place for a Malzberg in my world. There was no place for a Malzberg in *any* world. I would do him a favor and relieve him —

— BARRY MALZBERG DID NOT FEEL WELL THAT MORNING. HE MOPED ABOUT THE HOUSE AWARE, PERHAPS, OF HIS DISMAL FAILURE AS A WRITER AND HE LOOKED AT HIS BATTERED, FILTHY TYPEWRITER WITH DISGUST AND WAS JUST CONSIDERING SITTING DOWN TO IT WHEN A PAIN LIKE NO OTHER STRUCK HIM ACROSS

THE CHEST. HE RECOGNIZED IT INSTANTLY AS A MASSIVE HEART ATTACK AND KNEW HE WOULD BE DEAD WITHIN THIRTY SECONDS.

— thirty seconds to suffer. I am a generous man. Perhaps I might even allow him some last words —

— HE HAD TO RECORD HIS DYING THOUGHTS, HIS LAST WORDS. TWENTY SECONDS TO GO. WITH SHAKING FINGERS HE PUT PAPER INTO THE TYPEWRITER AND BEGAN TO TYPE, ATTEMPTING TO PREPARE A WILL AND TESTAMENT THAT WOULD SOMEHOW JUSTIFY HIM TO THE WORLD, NOT THAT THERE WAS ANYTHING MALZBERG COULD DO IN JUSTIFICATION, SOME TYPES OR VARIETIES OF PEOPLE I SHOULD SAY BEING BEYOND THE PALE OF NORMAL HUMAN INTERCOURSE OR EXPLANATION. *I WISH TO SAY*, THE MONSTER TYPED, BUT BY THAT TIME HIS THIRTY SECONDS WERE ALMOST UP, THEY WERE INDEED UP, HE FELT THE PAIN RADIATING AND THEN —

THE WONDERFUL, IMPERISHABLE, DARKLY REASONABLE, WHATEVER-I-TYPE-IS-TRUE MACHINE

by Barry N. Malzberg

Harrison couldn't write, never could, no style, no grace, no genuine feeling, a small mimetic sensibility of course, the ability to outline crudely, little sense of pace of course, but no *sensitivity*, no *darkness*, no *pain;* lacking, in other words, the literary touches. Given a gimmick, and Harrison could dream them up, give that to him, he could take it so far but never far enough; what he lacked was the ability to break *through* and into meaningful levels of implication.

He had the typewriter; driven by hate he tried to destroy (from envy, from jealousy, from his own inner emptiness) his old enemy, but he could not do it. Sitting there, jamming on the keys, he realized that as pleasant as it might have been to have killed the bastard Malzberg off and no loss to the world but instead a gain (Harrison's judgment being now as invulnerable as his health) it was too easy. An insight occurred to him then as he looked up from the typewriter after typing HE FELT THE PAIN RADIATING AND THEN — and the insight was this: it was too easy. To remove Malzberg so simply, so quickly, would have ended the feud and in a most satisfying way, but then again, and he had to face this fact and oh so difficult in the facing! but Harrison was strong, the feud had gone on so long and had lavished itself over so many details of his existence that it was one of

the central props of his miserable existence, simulating all purpose. How he had lusted for Malzberg's failure! dreamed of his expiration, but it was those very dreams which had propped up and justified his rationalizations, to say nothing of giving him the energy to turn out a ceaseless flow of science fiction which provided him with a marginal existence.

He couldn't do it.

It would have been one thing to have killed Malzberg slowly through torturous devices; it would have been another to have laid waste his fields, mute his typewriter, taken away piece by piece and in small bits over the years everything which was his so that he could *suffer* away ... but to knife him out of existence with a device which, strictly speaking, was not Harrison's and which he had not earned on his own—

— well, enough. He could speculate no further; not an introspective man, Harrison, even in his most extreme moments but instead a superbly conditioned imbecile prepared to deal with the world on its own terms through violent activity. It was sufficient for him to perceive at that moment that in the elimination of the unfortunate and misunderstood Malzberg he was doing injury to those very circumstances which had enabled him to function.

The point was to make the man suffer. He *would* make him suffer.

Harrison went into the kitchen and took a bottle of cheap Scotch from its stand on the sink, uncorked it and had a deep meditative swallow. "What are you doing?" his wife asked, slumped over the table in her characteristic posture of morning despair. He could not stand the woman. He really could not stand her. "Can't you at least lay off the stuff before noon? Harry, you *promised* —"

"To hell with you, you bitch."

"For the *children* —"

He put down the bottle with a crash, causing the babies to shake in the filthy pallets with which, at some extra expense, the kitchen had been furnished out as their sleeping quarters. "Can't you see that I'm trying to earn a living?" he screamed. Really, he could not stand her.

"Is *that* what you call it?"

"Yes," he said, "yes, that's what I called it," and nothing more to be done with her or any of them (she had never understood Harrison, but this was really not her fault: who did? certainly not Malzberg), and taking one more swallow of Scotch, he went back to the other room of the apartment, which had been furnished solely as working quarters. "It was worth three thousand five hundred and eighty-six dollars and twelve cents

last year you ungrateful slattern," he could not resist saying to her as a final, flinging, devastating remark however as he left the room and returned to the typewriter.

Not unsurprisingly it was still there. Question not gifts from the gods; it had already become part of Harrison's existence in the half hour since its delivery, and with an affectionate pat upon its platen he sat down behind it once again and, removing the incompleted page, put in a fresh piece and considered. Malzberg, of course. He would have to take care of Malzberg, he thought irrationally, see the bastard expended in small bits. But first, and quickly, there were other things, personal things for him to type, before he could devote himself, so to speak, to the task at hand:

— FROM NOW ON I WILL MAKE EIGHT THOUSAND THREE HUNDRED DOLLARS PER ANNUM FROM THE FULL-TIME WRITING OF SCIENCE FICTION. MAKE IT EIGHT THOUSAND FOUR HUNDRED AND I WILL ALSO BEGIN TO ACQUIRE THE SERIOUS LITERARY REPUTATION THAT IS MY DUE.

There! That would show them! It would, for once and for all, shut up the bitch with her constant hints and remarks about Harrison's inferior earning-power.

Almost enough but a little more. Most men are limited; faced with controlled power, they remit to small and *mean wishes* because they have not *trained* themselves to take a longer and larger view of alternatives as Harrison now demonstrated. But nevertheless, he tried. One can give him that.

— I WILL FIND AN AD IN TODAY'S CLASSIFIED OFFERING A THREE-ROOM APARTMENT FOR ONE HUNDRED AND FORTY DOLLARS A MONTH AND I WILL, OF COURSE, BE GIVEN A TEN-YEAR LEASE. I WILL TAKE THIS APARTMENT AND I WILL, OF COURSE, BE GIVEN A TEN-YEAR LEASE. I WILL TAKE THIS APARTMENT AND I AM ALSO AS OF THIS MOMENT RENDERED HARMLESSLY AND FOREVER STERILE ALTHOUGH SURGINGLY POTENT AS HAS BEEN NO MAN IN THE HISTORY OF THE HUMAN RACE. I AM IRRESISTIBLE TO WOMEN! I WILL LIVE IN MY ONE HUNDRED AND FORTY DOLLAR A MONTH THREE-ROOM CONTROLLED FURNISHED APARTMENT AND PROCREATE NO MORE.

That would do it.

And now back to Malzberg, Harrison thought. He removed the sheet, put it lovingly into the bottom drawer of his files, locked

the drawer again and concentrated the full force of his demented mind upon him whom he took to be an enemy.

— MALZBERG WAS NOT FEELING PARTICULARLY WELL THAT MORNING. IN FACT HE WAS FEELING QUITE TERRIBLE BUT ON THE OTHER HAND HE KNEW THAT HE WAS CHAINED TO LIVE OUT HIS DAYS IN JUST SUCH HYPOCHONDRIACAL, NEURASTHENIC MISERY AS BEFORE, THERE BEING NO QUICK ENDS FOR SUCH AS HE. AS HE TURNED TO FIRST THE LEFT OF HIM AND THEN THE RIGHT IN THE SMALL DENSE SPACES OF HIS FILTHY LITTLE OFFICE, HE REALIZED THAT HE WAS ENTRAPPED, WHOLLY ENTRAPPED WITHIN HIMSELF AND THAT HE WOULD ALWAYS BE THE SAME EXCEPT OF COURSE WHEN IT BECAME WORSE. AT THE DOOR HE COULD HEAR THE WHISK OF MAIL BEING DROPPED INTO THE SLOT: BILLS, THREATS AND PAST-DUE PREMIUM NOTICES; LOOKING OUT THE WINDOW HE COULD SEE HIS ALMOST-NEW AND WHOLLY INDEBTED NEW CAR ALREADY CRUMBLING, SLOWLY ROTTING INTO THE DRIVEWAY IN ITS CHEAP CHARACTERISTIC FUMES OF LEAKING OIL AND GAS; OVER HIS HEAD HE COULD HEAR THE SCREAMING OF HIS SECOND-BORN AS ONCE AGAIN SHE HAD AN ATTACK OF CRAMPS; THROUGH THE WALLS HE COULD HEAR HIS WIFE SHRIEKING AT THE SECOND-BORN OR MAYBE SHE WAS NOT SHRIEKING, THIS BEING THE ONLY WAY IN WHICH HIS WIFE COULD CONVERSE WITH THE CHILD OR FOR THAT MATTER WITH MALZBERG HIMSELF. I CAN'T STAND IT ANYMORE! THE BRILLIANT YOUNG WRITER SAID THINKING THAT HE WAS TALKING OF HIS LIFE BUT REALLY MEANING HIS BOWELS AND PULSE RATE, I CANNOT TAKE THIS ANYMORE; WHY DO THE HARRISONS OF THIS WORLD HAVE EVERYTHING WHILE I HAVE NOTHING RIGHT DOWN TO THE GIMMICKS FOR THE SHORT STORIES? WHY DOES HARRY HARRISON EARN THIRTY-FIVE HUNDRED A YEAR WITH MANY ANTHOLOGIES TO EDIT IN THE BARGAIN AS WELL? WHAT HAS HE DONE TO DESERVE THIS WHILE I, A WRITER WITH FELLOWSHIP BACKGROUND AND LITERARY CREDENTIALS AM, WELL, *HATED?* AND KNEW THERE WAS NO ANSWER TO THIS JUST AS THERE WAS NO END TO HIS SUFFERING OR HIS SENTENCES. I ENVY HARRISON HE SAID ADMITTING THIS FOR THE FIRST TIME. I ENVY THIS MAN WHO I MIGHT AS WELL FACE IT

IS GALLING TO ME BECAUSE HE MAKES THIRTY-FIVE HUNDRED A YEAR WHILE I, A FELLOWSHIP HOLDER WHO HAS READ MOST OF VLADIMIR NABOKOV INCLUDING PALE FIRE THREE TIMES AND DESPAIR ONCE AS WELL AS MUCH OF GOGOL AND EVAN S. CONNELL, JR., I MADE EXACTLY FOUR HUNDRED AND SIXTEEN DOLLARS AND TWELVE CENTS LAST YEAR, MOSTLY FROM THE RELIGIOUS MAGAZINES WHICH WILL BUY ANY KIND OF CRAP AND FOR THE REST WE LIVED FROM WELFARE AND FOOD STAMPS. I CANNOT TAKE IT ANYMORE, HARRISON DID THIS TO ME AND I AM GOING TO DEAL WITH HIM AS HE WOULD DEAL WITH ME: KNOWING HIS INMOST DESIRE I WILL EXERCISE MINE FIRST AND

DEATH OF AN ANTHOLOGIST
by Barry N. Malzberg

Harrison woke to darkness and the awareness of an overwhelming pain hovering in his chest. *Heart attack!* he thought desperately. He was right. He had but seconds to live, but like a drowning man possibility danced before him; he

A HACK IS GONE
by Harry Harrison

This was the last minute of Malzberg's life. As he was just finding out. Death, in the form of a massive coronary occlusion, seized the pretentious fool and in just a moment

A SLOB GOES AWAY
by Barry N. Malzberg

He was dead, Harrison realized, awakening, and

WRITER GONE
by Harry Harrison

Malzberg was dead. So

HARRISON DEAD
by Barry N. Malzberg

The corpse had been named Harri

You're dead.

No, sir, *you*

You fu

NOTICE TO SHIPPING: AS OF THIS MOMENT, ALL ETERNITY MODEL TYPEWRITERS ARE WITHDRAWN. EXPERIMENT A TOTAL FAILURE.

I SHOULD HAVE KNOWN BETTER.

G.

Robert Young's latest is about three goons from Earth who bring their proven techniques to a labor dispute on Rigel II and meet with some surprisingly sophisticated resistance.

Hex Factor

by ROBERT F. YOUNG

The Alien Import Law enacted by the International Congress at the turn of the twenty-first century gave all extraterrestrial races the right to compete tariff-free on the Earth Common Market. It had seemed at the time a safe way to extend a helping hand to the "brothers of mankind," since all of the "brothers" were still in their stone ages or but recently emerged from them. How could anyone have foreseen that a bunch of bronze-age gooks like the Runes of Rigel II would develop a technology virtually overnight and produce an electricar powerpac, or minibattery, that sold for one third the price of union-made brands and that never needed to be recharged?

When the news broke, electricar owners throughout the world rejoiced. Simultaneously, four dark clouds gathered in the economic sky — one over each of the three major powerpac companies and the fourth and darkest one of all over the United Union Building, which the Big Brotherhood had just built in Old York.

There is no better time to nip a new industry than when it is still in the bud. Accordingly, the Big Brotherhood called an emergency meeting at which it was agreed that the Runes' flagrant disregard for the poor workingman warranted employing an old-line organizer and that said organizer should be the best in the business. Enter Anthony Healy. The Big Brotherhood appointed two polygenetic professionals to assist him — one an ex-tool and die maker and practicing karate expert named Albert Zhiyomei, the other an ex-pipefitter named Adolph O'Pyzikiewicz. Healy was then directed to proceed to Rigel II, obtain a sample of "factor X" (the label applied by Earth's electrochemists to the Runes' mysterious

powerpac-energizer) and to see to it that production came to a permanent halt.

Healy was glad to get the assignment. He hadn't practiced his profession since culling the scabs out of International Motors' Aldebaran IX Assembly Plant. Recently he had taken to beating his wife and kids — a sure sign that he was going stale. Rigel II turned out to be a pleasant-enough planet, white at the poles and girded by a tricolored equatorial forest. The A.P. was preprogrammed and brought the compact U.U. ship down in the middle of the Rune spaceport, or rather, in the middle of the charred clearing created by the retroblasts of the wildcat freighters that served Runeland's new industry.

Logically, the Rune powerpac factory could not be far away. After pocketing a mini-Mauser (the Runes were classified as a gentle peace-loving people, but you never could tell), Healy activated the ship's homing transmitter; then he and his two assistants disembarked and set forth on foot along a woodland road, the deepness of whose ruts indicated it to be a main thoroughfare. It was a fine day, the afternoon air brisk and bright, curlicues of forsythia-colored sky showing through the red, white and green foliage, and blue parakeets winging among the graceful branches.

Presently they came to a village, where they found a welcoming committee awaiting them. It consisted of five old men wearing bibs made out of plantainlike leaves. The rest of the villagers, wearing similar attire, were lined up on either side of the street. Healy had seen pictures of Runes, but pictures didn't do their ugliness justice. They were small and puny, purplish of pigmentation, lemur-like of eyes and rabbitlike of teeth. The women had breasts, but they were the size of prunes and looked like them.

The welcoming committee had appointed a spokesman. He stepped forward and said, "We have long expected you, O noble Earthmen. Welcome to our new industrial state."

Neither the man's command of English nor the Runes' having expected visitors from Earth surprised Healy. No matter where you went these days, you always ran across some gook who could speak your language better than you could; and as for the Runes' expecting visitors from Earth, they would have been idiots not to have expected them, in view of the fact that they were castrating the terrestrial economy.

He had already given the village a routine glance; now he gave it a

long look. Huts made out of strips of bamboolike wood and thatched with dried grass; narrow streets and squeeze-space alleys; no evidence anywhere of even so primitive a form of power as electricity...How the hell could you correlate such a nontechnological background with the sophisticated powerpac he carried in his pocket?

He pulled it out and showed it to the welcoming committee. It was 2½" long by 2" wide by 1" thick, perforated front and back, and its terminals were so tiny you could hardly see them. "I'm looking for where these little black boxes are made," he said.

"Why, they are made on Earth," said the spokesman.

"On *Earth!*"

"Yes, we import them from a firm called JobShopCo."

It dawned on Healy then that it was the powerpac cases, not the pacs themselves, that the spokesman was referring to. It should have dawned on him in the first place. Plastic was a good five hundred years in the Runes' future, but they could conceivably have stumbled upon a means of energizing the clay that constituted the pacs' storage units.

He tapped the powerpac with his forefinger. "Okay, you import the boxes from Earth, but you put the power in them here — right? Where?"

"Our booming young industrial factory lies deeper in the forest," said the spokesman proudly. "I will appoint a guide to show you a shortcut in order that you may arrive in plenty of time to watch the night shift in action."

Toward nightfall, the guide led the three U.U. men into a big clearing. In the center of the clearing stood a long narrow building built of bamboolike wood and thatched with dried grass. Surrounding the building at an average distance of about fifty yards were huts similar to those they had seen in the village. In the doorway of each squatted a wizened old woman smoking a long-stemmed pipe.

Labor shanties?

Healy took a harder look at the long, narrow building. Apparently it had no windows, but there was a door in its nearer end. Rising above its farther end was a primitive chimney built of blue clay.

Zhiyomei laughed deep down in his belly where his *Shitahara* muscles were. "In Japan they usta use such sheds to store night soil in."

The guide had gone into the building. Presently he came back out, followed by a no-longer-young but not-quite-old Rune with white circles painted round his eyes, attired in a plantainlike leaf smock.

"Welcome to RuneCo," he said in a little singsong voice. "I am Krench, superintendent of the first of what is to be a veritable complex of factories encircling our planet." Another Rune, similarly attired, stepped out into the dusk. "And this is Pieh, the production manager. It was he, who, while attending industrial school on Earth, had conceived the brilliant idea, and the means of implementing it, that has put our poor country on the road to technological greatness. I witnessed the descent of your ship and am highly honored that scientists should come all the way from Earth to visit our humble factory."

So if the gook wanted to think they were scientists, let him, Healy thought. Aloud, he said, "I'm Healy, this is Zhiyomei and that's O'Pyzikiewicz. How soon does the action start?"

"Presently, Dr. Healy. Owing to the nature of our technology, the factory operates only during the night; however, we have two night shifts, the first of which will commence work shortly. In a few minutes, things will begin to hum. Step into my office and make yourselves feel comfortable."

The office occupied a small area just within the door and was separated from the factory proper by a flimsy partition consisting of horizontal slats of bamboolike wood and containing a door built of the same material. Illumination came from three fat candles burning in three glass globes — probably imports from Earth — suspended from the ceiling. Counting the one behind the desk, there were four chairs, all of them made of bamboolike wood. The desk was unquestionably an Earth import, though why anyone would want to import it Healy would never know. It was circa 1950, made of heavy-guage steel and perforated with rust holes. Arranged upon its rotted linoleum top were a number of miscellaneous items, some of Earth origin, others indigenous: a bottle of green ink, a quill pen, a scratch pad consisting of parchmentlike leaves, a plastic tray filled with common pins of various sizes, a pencil with the letters *JobShopCo* stamped on it, a plastiglass jar filled with blue clay, an in-and-out basket woven of strips of bamboolike wood, and an earthenware bowl filled with paper clips. The floor consisted of pure Rigel II dirt.

Hanging on the outside wall next to the door and flanked by two card racks, one filled with parchment-leaf cards, the other empty, was a time clock.

"How come no computer?" O'Pyzikiewicz asked sardonically, seating himself in the second most comfortable chair.

Healy had already sat down in the most comfortable one. Zhiyomei took possession of the third most comfortable one, and Krench retired behind his desk. The guide had remained outside.

Healy looked at the time clock. Its mechanism had been adjusted to compensate for Rigel II's slightly faster rotation, and a parchment-leaf face bearing Rune numerals had been pasted over the original. The little hand pointed to (and the big hand to)-(.

"Time to get things humming," Pieh said and, opening the door, blew a blast on a willowlike whistle that sent the parakeets screeching for miles around. He closed the door, walked across the office and let himself through the inner door into the factory proper.

A few minutes later the outer door opened and an old woman shuffled in, pulled a card from the left-hand rack, punched it, inserted it in the right-hand rack, shuffled across the office and entered the factory.

Presently a second old woman entered, punched her card and entered the factory. A third. A fourth. All of them had long noses and snaggle teeth.

"How come you don't hire no young girls, Krench," Zhiyomei demanded.

"They lack certain — ah — qualifications. Men, too seldom qualify, regardless of age. Pieh and I are exceptions."

Altogether, thirteen crones entered the office, punched the clock and went into the factory proper. Suddenly from beyond the bamboolike partition separating management from labor came a second shrill blast from Pieh's whistle. "Production is about to begin," announced the superintendent of RuneCo, and he activated an unseen mechanism behind his desk that caused the partition, door and all, to roll up into the ceiling.

The factory proper was now revealed. Torches burning in wall brackets supplied the illumination, and shadows seemed to dance up and down the long narrow room. A long table flanked with stools ran down the center, terminating before an enormous hearth in which a big bronze cauldron hung on a tripod. Piled along the right wall were dozens of cardboard cartons with the letters *JobShopCo* stamped on them. Piled along the left wall were dozens of similar cartons with the letters *RuneCo* printed on them. The floor was vintage Rigel II dirt.

Pieh was kneeling beside the cauldron, pumping a pair of primitive bellows. Twelve of the thirteen crones had seated themselves at the table, six on either

side. The thirteenth was standing by the cauldron, stirring its contents with a long wooden spoon. Presently Pieh laid the bellows aside, got up, went over to the right wall and picked up one of the JobShopCo cartons. Carrying it over to the office end of the table, he set it on the floor, opened it and began removing the powerpac cases it contained. These he piled on the end of the table. When the carton was empty, he set it aside, produced a wooden crank, inserted it in a slot under the table edge and began to turn it. Wooden gears creaked; the table trembled. The inner section of its surface began to move.

"Henry Ford VIII should see *this* setup," O'Pyzikiewicz said.

"I'll say," said Zhiyomei.

Krench glowed. "I thought you'd be impressed. Of course, a conveyor belt is only a small step forward, but it's a step in the right direction, and it shows that RuneCo is well on the way to modernization."

Healy just looked at him.

Turning the crank with one hand, Pieh placed two powerpac cases on the belt with the other. Simultaneously, all of the crones began to hum. Hum-hum-humm. Hum-hum-hummmm. It was the weirdest noise Healy had ever heard. It sounded like a wordless incantation.

Pieh placed two more cases on the belt. The first ones were now opposite the first two crones. They separated the top and bottom sections and placed them neatly side by side. Hum-hum-hummmm. The next pair of crones had earthenware bowls filled with blue clay sitting at their elbows. They broke off chunks of the clay and packed them into the bottom sections. Hum-hum-hummmm. The next pair had earthenware bowls filled with brownish powder sitting at their elbows. They took pinches of the powder and sprinkled the clay. Hum-hum-hummmm. Meanwhile, Pieh continued to place new cases on the belt, simultaneously turning the crank.

Healy took it all in, but he wasn't buying any of it. The Runes had had plenty of time to prepare for visitors, and they had made good use of it. What he was witnessing was an artfully contrived act designed to play down the importance of the cauldron's contents. As sure as he was born, those contents constituted — or comprised — factor-X.

"Hey, Krench," Zhiyomei said, "one of your employees is sleeping on the job. That old girl down at the end there."

"Good," Krench said. "I had hoped for an opportunity to demonstrate how we of RuneCo keep our employees alert, or, as you

say on Earth, 'on the ball.'"

Reaching into the plastiglass jar, he broke off a fist-sized piece of blue clay and with astonishing dexterity molded it into the shape of a Rune female. "You must understand," he said, "that the likeness does not need to be exact and that the substance employed to form it serves merely as a medium. The essential factor is the intensity of the projected malevolence." He set the little clay statue upright on the desktop and selected a tiny pin from the tray at his elbow. He sat for a moment without moving, and the painted circles round his lemur eyes took on a bluish cast. Then, with an artful thrust, he stuck the pin into one of the effigy's tiny buttocks.

From down the room came a high-pitched scream, and the old woman who had dozed off leaped from her stool and began feeling frantically of her right buttock. A moment later she produced a pin that was at least two inches long. Casting it aside, she started to sit down again, then thought better of it and remained standing.

Casually, Krench rolled the effigy into a ball and dropped it into the plastiglass jar. "If I didn't know better," Healy said, "I'd think you were a witch."

"I *am* a witch," Krench said. "As are all my production-line employees. As is Pieh. I thought that would be clear to you by this time, Dr. Healy."

"You'd like it to be clear, wouldn't you? You'd like me to think, wouldn't you, that that pin-sticking act you just put on was on the level. You'd like me to think, wouldn't you, that there's some sort of Rune Beelzebub energizing those powerpacs."

"You may think what you like, Dr. Healy. I am not even altogether certain myself as to exactly who or exactly what accomplishes the energization. I spent but little time on Earth, and learned very little during my stay. Pieh, however, learned a great deal during his, especially about science. Witchcraft hadn't been practiced among our people for centuries, but in some of us — especially among our older women — certain latent powers existed, and it was he who conceived the idea of putting them to scientific use. He theorizes that a fourth-dimensional interrelationship exists between the microcosm and the macrocosm; and that when a witch such as myself sticks pins in an effigy, his malevolence acts as a bridge between realities; and that systematized rituals, such as the one in progress now, tap a micro-macro or macro-micro energy flow. According to Pieh, a planet and a pebble, micro-macrocosmically speaking, are one and the same thing."

"Sure they are," Healy said. "And it'll be a nice day tomorrow if it doesn't rain."

Meanwhile, the first pair of powerpac cases, followed by the successive pairs Pieh kept placing on the belt, had continued to move down the table. They had come opposite the fourth pair of crones, who had made intricate passes over them, the fifth pair, who had sealed the top and bottom sections together with a black gummy paste, and were now approaching the sixth and final pair, one of whom was the old woman whose effigy Krench had stuck with a pin. The sixth operation turned out to be simplicity itself: the two crones merely picked the powerpacs up and dropped them into the cauldron.

"Aha!" Healy said. He got to his feet. "If you don't mind, Krench, I think I'll have a little look-see at what's in that kettle."

"Please do, Dr. Healy."

Entering the factory, Healy walked down the dirt floor to the hearth. The crone tending the cauldron trembled at his approach. Commandeering her wooden stirring spoon, he peered over the cauldron's rim. He saw a brackish bubbling fluid that looked like borscht and smelled like old shoes, dead fish and Romano cheese. For a moment he was disconcerted; then he reminded himself that factor-X *had* to be unconventional; otherwise, the electrochemists would have been able to reconstruct it from its effect upon the clay storage units. Taking a small all-purpose container out of his inside coat pocket, he filled it by means of the wooden spoon, tossed the spoon back to the thirteenth crone and returned to the office.

He replaced the container in his pocket and faced Krench across the latter's desk. "With your secret in my pocket, it would seem, wouldn't it, Krench, that all I have to do to put you out of business is to go back to Earth and turn it over to the union powerpac companies. But —"

"I'm afraid you don't understand, sir," Krench interrupted. "We have no secret as such — only an unorthodox method of energizing ordinary clay, which even we ourselves do not fully understand. The brew which you have taken a sample of was concocted from ancient recipes, but immersing the powerpacs in it is only the final phase of the ritual. By itself, the brew is powerless."

"But even *with* your secret," Healy went on relentlessly, "the union powerpac companies would still be out in the cold. They couldn't even begin to compete with you and your dirty scabs pricewise. Even if I got a union in

here, they couldn't compete, because you'd still have no taxes to cough up, no bills to pay and no antipollution equipment to install." He brought his big bricklayer's fist down on the desktop. "And do you know what that means, Krench? It means that if you go on producing powerpacs some of our boys are going to start losing their jobs. It means that honest hard-working union men with wives and kids to support are going to have nothing coming in but unemployment insurance, layoff pay and United Union security-allowance. And all because you and your buddy Pieh got greedy all of a sudden and dipped your dirty fingers into somebody else's honeypot!" He nodded to Zhiyomei and O'Pyzikiewicz. "Let's clean house, men."

Zhiyomei got up, walked around the desk, picked up Krench by the neck and poked out the Rune's front teeth with his extended forefinger. O'Pyzikiewicz entered the factory proper, picked up Pieh, carried him down the room and threw him into the cauldron. Zhiyomei dropped Krench, followed O'Pyzikiewicz into the factory and tipped over the table, bringing production to a screeching halt and sending the production employees scattering in twelve different directions. Strictly speaking, the guide wasn't part of the action, but Healy went outside and beat him up anyway. Afterward he re-entered the office and started stomping Krench. When his boots got bloody, he joined Zhiyomei and O'Pyzikiewicz. The three men picked up the table and, using it as a battering ram, smashed both of the building's rear corner poles. The rear wall collapsed, the chimney came tumbling down, and the room sagged. Dried grass rained down into the room, some of it landing in the hearth and igniting. The flames spread swiftly, began climbing the right wall. The factory filled with smoke. Somehow Pieh managed to climb out of the cauldron and staggered through the big hole where the rear wall had been and out into the night. Screaming and shrieking, the thirteen production employees followed him.

Healy let them go. The factory was burning lustily. He and his two assistants entered the office, tore the time clock off the wall and smashed the four chairs. Then Healy tuned in the U.U. ship's homing signal on the receiver attached to his lapel. As he followed Zhiyomei and O'Pyzikiewicz out the door, he glanced over his shoulder at Krench. The Rune had one hand on the desktop and was trying to pull himself erect. "We'll be back in a month, Krench. Better not build no more factories."

Healy lifted the compact U.U. ship straight up, orbited it once and reprogrammed the A.P. for Earth. O'Pyzikiewicz broke open a quart of Cutty SynSark, and the three men made themselves comfortable in the cockpit-stateroom-lounge and began toasting the success of their mission. In the middle of the third toast, what appeared to be an enormous steel javelin came through the starboard hull and imbedded itself in the port bulkhead. It was at least three inches in diameter and a good twenty feet long. The ship shuddered and the air pressure began to drop. Zhiyomei screamed. A moment later, a second javelin came through the port hull, skewering O'Pyzikiewicz, who was trying frantically to open the suit locker. The ship yawed. "Pins!" Zhiyomei screamed. "They're *pins!*" The third "javelin" caught him in the midriff and pinned him against the starboard bulkhead like a big bug.

"Micro-macro —" Healy began. Then he saw the fourth pin coming and tried to dodge. He didn't quite make it.

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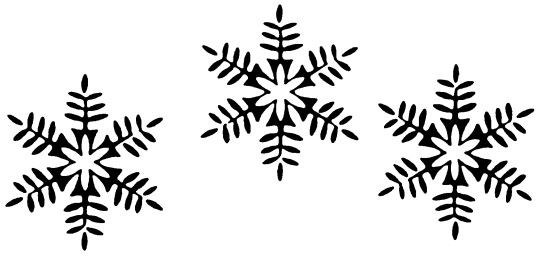

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