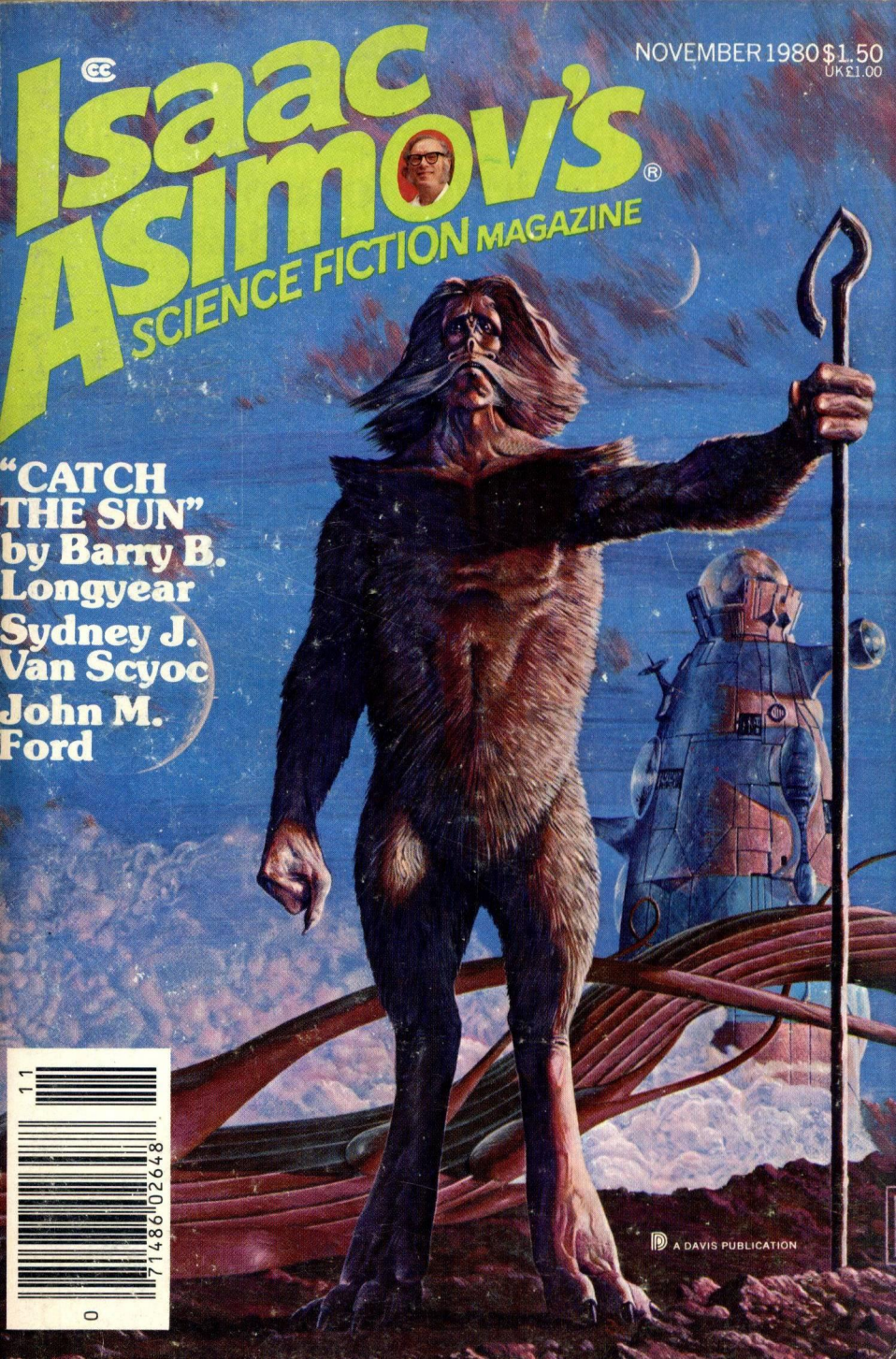
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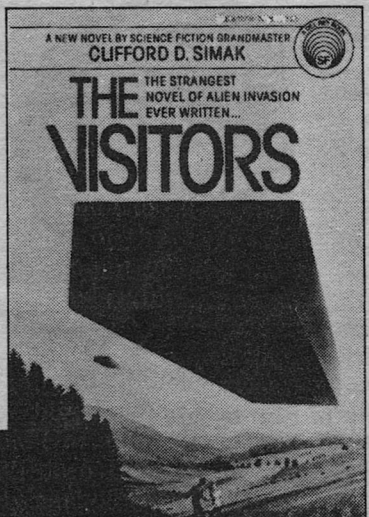

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EDITORIAL: MY AUTOBIOGRAPHY

by Isaac Asimov

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There are some hundred thousand or more of you out there who buy this magazine and I am perfectly at ease with all of you—and I am delighted that I am.

I have a rapport with my readers. It was something like twenty years ago that I began speaking directly to them in my non-fiction essays, and even in forewords and afterwords in my fiction collections.

This had (and has) both its advantages and disadvantages—as everything does. The advantage is that it works both ways. If I am clearly friendly and at ease with you, you become friendly and at ease with me. I doubt that there's another writer so many of whose readers habitually think of him by his first name. This spills over on to this magazine, which is also perceived by its readers (on the whole) to be warm and friendly.

The disadvantage is that this relationship among ourselves is apt to be puzzling to those who are outside the fold. Then it requires explanation. There is, for instance, the case of my autobiography, which seems a most peculiar one when one doesn't understand the rapport between myself and my readers.

The autobiography is in two fat volumes. The first is *In Memory Yet Green*, published in hard-cover by Doubleday in March, 1979 and in soft-cover by Avon in March, 1980. The second is *In Joy Still Felt*, published in hard-cover by Doubleday in April, 1980, and in April, 1981, it will be in Avon soft-cover.

The first volume, which is a little over 700 pages long, covers the first 34 years of my life (1920 to 1954); the second, which is a little over 800 pages long, covers the next 24 years (1954 to 1978). That's 640,000 words devoted to a rather quiet life. (It can't help but be quiet. Having published well over two hundred books and innumerable shorter pieces, there is precious little I do other than sit at the typewriter; and there's not much drama in that.)

Well, then, why have I written so *much*?

Almost all the reviewers have been very kind to me, but that is what they wonder. Even when they admit they liked the books and

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didn't find them tedious, they tend to refer—with both amusement and bemusement—to my insistence on describing *everything*. Some call the book a laundry list; some say, as kindly as possible, that it tells more about me than anyone would care to know.

Yet surely I'm not an incompetent writer and can be supposed to know what I'm doing. Then why did I write such a peculiar autobiography?

Let me explain—

I know something others don't know, because I'm the one who gets the letters from my readers. I'm the one who knows the questions I am asked. I'm the one who knows how often someone will write and ask me for a complete list of every book I've written on any and all subjects. I'm the one who knows how often a reader wants to know where a particular article appeared or if I had written on a particular subject, or how many times a particular item was rejected and so on. Apparently, my writing career is sufficiently out of the ordinary to warrant this sort of detailed curiosity; and my open friendliness to the reader is such as to make me seem accessible to such questions.

Therefore, I deliberately planned to make my autobiography a complete and very personal literary reference book. I give details on every piece of fiction I wrote: when I wrote it, how I wrote it, who accepted (or rejected) it, how much I was paid for it, in which issue of which magazine it appeared, and in which of my books it could be found. Some of my non-fiction pieces (there I was somewhat selective—or the book would have been impossibly long) are similarly treated.

Every book without exception is mentioned. For every year from 1950 onward, the names of the books and the publishers are given in the order in which they appeared in that year, and each is given an overall number.

At the end of the book there is an appendix in which all my books are listed in 19 different categories. For each book, the overall number is included, the publisher, and an asterisk if it is for children. Finally, there is a title index in which every single piece of writing (even if it is an item that was never finished, or a title that was never used in the actual published form) is listed, and the pages on which it is referred is given.

It sounds like egomania, and I'm accused of it frequently enough, but I am attempting to supply a need. My readers want to know these things and I am willing to tell them. It is physically impossible for me to tell each reader all he or she wants to know by detailed

individual communication, but the autobiography supplies it instead.

Once it appeared, I could answer most questions by referring the reader to my autobiography. And no, this is not a device to push sales and get rich. Readers know very well they can get the books at lower prices from the Science Fiction Book Club, at still lower prices as a paperback, or at no price at all from the public library.

A second feature of the autobiography is that I have gone to some trouble to include every foolish and silly thing I have ever said and done that I can remember. (Ben Bova pointed out that that alone accounts for the length of the autobiography.) Why do I do that? Well, to begin with, such stories generally make for funny reading. More important is the fact that they tend to puncture the all-too-frequently held opinion that I am incredibly smart and that I know everything.

I'm no dummy, of course, and I know a great deal, but I do not wish to be overestimated and made better than I am. Such overestimation is uncomfortable for me, and it makes it impossible for me to avoid disappointing people. What's more, I don't wish to accumulate the dislike that often adheres to people who seem to glory in their own perfection. For that reason I am perfectly willing, even eager, to display my shortcomings and to establish myself as an ordinary human being who, like all human beings, is a mixture of bright and dumb, nice and not-so-nice.

Finally, my autobiography is, in some ways, an experiment.

I have an excellent memory, and—from January 1, 1938—I kept a diary (and I'm still keeping it). It was therefore possible for me to write the book in a great deal of accurate detail as far as dates, names, and even actual conversation is concerned.

Not only, then, did I attempt to write a strictly objective and factual account (to the limits of my fallible humanity), but I endeavored to make it absolutely chronological. I did not skip here and there across the years in order to make some point. I did not make use of foreshadowings. At every point in the autobiography, I tried to reveal no more than I knew at that moment in my life. The reader knows only what I know and lives my life along with me.

Ideally, I hoped that the reader would pause now and then in the tale and wonder: "Say, is he going to make it?"

For all these reasons, I wrote the autobiography the way I wrote it.

And yet some things I left out. I tried not to include things that would hurt the feelings of others or invade their privacy. I also

omitted all philosophic rumination. I didn't try to gather together the "wisdom" of a lifetime. I didn't try to analyze or interpret what I had done, find motives, trace consequences, and—in general—indulge in autopsychiatry.

I felt that such things were bound to be self-serving. As soon as I started to interpret myself (beyond what was absolutely necessary) I would begin to find excuses for myself and would work to put the best face on everything.

I don't want to do that. Rather, by merely presenting what I did and what I thought at the time I did it, I leave it to each reader to supply the interpretation, if he or she wishes. Interpreters may disagree with each other; but that is their problem, not mine.

Of course, my life is not yet over. Perhaps I will be given a chance to write a third volume. (I already have a title—*The Scenes of Life.*) If so, I will stubbornly write it along the lines of the first two, following the same system.

And I will feel justified in doing so. Aside from my own inner approval, which is essential, I am backed by someone whose opinion I respect.

Algis Budrys, who reviewed *In Joy Still Felt* in the *Chicago Sun-Times* of April 13, 1980, said, "Once again, Asimov has gauged his audience correctly. If you were to ask a board of experts how to write an autobiography, the resulting prescription would look nothing like this. But this *works.*" (Italics his.)

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ON BOOKS
By Baird Searles

*Conan the Rebel** by Poul Anderson, Bantam, $2.25 (paper).
The Magicians by James Gunn, Signet, $1.95 (paper).
West of the Sun by Edgar Pangborn, Dell, $1.95 (paper).
Out of the Storm by William Hope Hodgson, Centaur Books, $4.95 (paper).
The Black Wolf by Galad Elflandsson, Centaur Books, $4.95 (paper).
Takeoff! by Randall Garrett, Donning, $4.95 (paper).
Wanted, produced by Eric Seidman with text by Ed Naha, Bantam, $8.95 (paper).
Tik-Tok of Oz, The Scarecrow of Oz, Rinkitink in Oz, The Lost Princess of Oz by L. Frank Baum, Del Rey, $2.25 each (paper).
What If? Vol. 1, edited by Richard A. Lupoff, Pocket Books, $2.50 (paper).

The name of Conan not only brings fear to the hearts of petty ne'er-do-wells and black sorcerers of the Hyborian Age and greedy smiles to the lips of filmmakers of the Electronic Age; the mere mention of it can make most lovers of adult fantasy and intelligent science fiction turn pale and press their wrists to brow.

This is an unfortunate if understandable snobbism; Conan is in something of the same position as *Star Trek,* as a phenomenon that has been overhyped and overblown in a way that obscures some basic quality underneath it all.

Robert E. Howard must have pressed some sort of primal button with the invention of Conan in the 1930s; it can certainly be argued that he was one of several independent inventors of the subgenre of epic fantasy or "sword and sorcery" (categorization gets a little cloudy in this area). For their time, the stories of the Hyborian Age were startlingly original.

The continuation of these stories beyond Howard's own canon is certainly questionable; on the other hand, Howard did leave a number of bits and pieces that could legitimately be finished off by such reputable writers as L. Sprague de Camp, whose works are often in the same vein. And then, like Topsy, Conan "just grew"; where

*Labelled by Bantam in its infinite wisdom as #6 in its Conan series, but which in reality is #5.

there's a demand, supply will probably follow.

I think it's a libel that all Conan fans' knuckles touch the floor when they stand. There *are* those, of course, but I (who am long-waisted) also find the Hyborian world a fun place in which to romp.

This small essay on Conaniana was brought on by the latest original Conan novel (if that's not a contradiction in terms) which is called *Conan the Rebel* and is by Poul Anderson.

Now my admiration for Mr. Anderson as a fantasy writer knows no bounds, and I was frankly hoping that this would be one of those splendid Anderson fantasies that happened to be about Conan. As it happens, it's a dandy Conan novel that happens to be by Anderson. No transcendence, but mucho good fun. And there are some very skillful Anderson touches.

The action takes place mostly in Stygia, a country just chock-full of unpleasant sorcerers and sorceresses (the former gross, the latter gorgeous, of course). We start off smack-bang with the evil Tothapis, who is informed by his master, the god Set, that there is going to be one hell of a dust-up between himself and the god Mitra, and in order for Set to win it, Tothapis had better do something about an alliance that has just been formed between a Northern barbarian (guess who) and a ravishingly beautiful lady pirate.

The rest of the novel is one long view halloo as the villains chase Conan and Conan chases after a sacred ax of Mitra which is sure to win the day for the good guys.

I thought things looked pretty promising when we were told on the first page that the mattress of Tothapis is stuffed with the tresses of sacrificial maidens. Anderson doesn't quite reach that level of camp thereafter, but as I said, there are several skillful moments. In one, a spell of discord is laid on Conan & Co., but the reader isn't told this and it's up to him to figure out why everybody is suddenly acting very peevish. In another, Conan confronts a couple of monsters in the necropolis where lies hidden the sacred ax and, Anderson being Anderson, these just aren't any old monsters, but two perfectly described prehistoric beasties. Again, it's up to the reader to notice this.

So, in case you were worried, Conan is alive and well, at least here in the hands of Poul Anderson.

As you may have gathered from the above, I liked the fact that some assumptions were left up to the reader. Contrariwise, I was a little unhappy with James Gunn's *The Magicians* because Gunn seems to think he's writing for a readership of know-nothings.

The novel is one of those magic-in-the-modern-age stories, of which subgenre there are some wonderful examples *(Conjure Wife; Magic, Inc.; Bell, Book and Candle)*. It's told in the first person by a none-too-bright private eye who is trying hard to be Philip Marlowe. Hired to find out a certain person's real name, he finds himself in what seems to be a perfectly ordinary hotel-based convention, but which is really a coven squared (13 X 13) of witches and warlocks. One (small) faction wants to treat magic as a practical science (which it is, as defined here); the others just want to continue using it to get what they want. Our hero gets involved, and from there it's all witchery and skullduggery.

Gunn is an intelligent writer (as demonstrated by his *Alternate Worlds,* one of the few objective histories of SF), so why he feels that he must consistently overexplain in this novel is beyond me. Certainly his narrator is no intellectual, but must he keep telling himself things that are for the benefit of the reader? Such as since the doorkeeper of the convention wears a name tag that reads Charon, the good part of a paragraph is spent on telling us who the original Charon was.

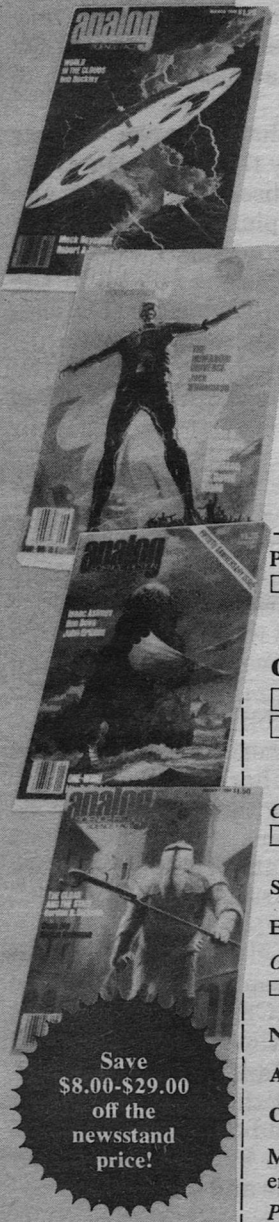
There are several other moments like that one, and as for the coven squared, supposedly consisting of the richest, most powerful, and most beautiful people on Earth (who have achieved all this through witchcraft), it comes off as a convention of used-car salesmen from the Midwest—no, let's be just to the Midwest; let's say California.

In all fairness, it's an amusing little story that galumphs along speedily enough, certainly good for a few hours' amusement. I just wish I didn't feel it had been written for slightly retarded adolescents.

Edgar Pangborn is a writer with whom the older generation of SF readers are certainly familiar, but he's not that well known among the younger ones. This is too bad and will, I hope, be remedied by the fact that his works (not that many in all) are slowly coming back into print. (Curiously enough, the best known, *Davy,* is inexplicably *out* of print at this point.)

His *West of the Sun* has been reprinted, and what a nice book it is! It's a variation on the classic Swiss Family Robinson theme which adapts so well to SF when neatly handled. Ah, the excitement of being stranded on a new planet, with all sorts of wonders and adventures to be found!

In *West of the Sun,* it is an exploring party of six humans—four



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men, two women—who are stranded on the unknown planet that they dub Lucifer. They find there two sapient races, one of very primitive anthropoid giants, and one of red-skinned pygmies far enough along on the road to civilization to have acquired most of its unpleasant properties.

The attempts of the humans to preserve what they can of their own 21st century culture while imparting only the best to the other races is the main thrust of the novel, but dissension among the humans and wars among the pygmies add plenty of action (the giants are as pacifically-minded as our world's gorillas). It's all suffused with Pangborn's scientific humanism; there is no evil in the story, just wrong-headedness and misguidance. The pastoral Utopia they end up with may be a little too simplistic by today's standards, but it's awfully nice to read about despite a slight tendency of the author's toward preachiness which luckily never quite gets out of hand. Maybe Pangborn's sweet '50s optimism is what we need right now.

Gallant little Centaur Books, which makes a specialty of publishing interesting stuff in paperback that none of the big fellows seems to want, has just given us two new publications. *Out of the Storm* is devoted to the uncollected short stories of William Hope Hodgson, that extraordinary English writer of the early part of this century. While the short works obviously haven't the power and sweep of the novels (his 200,000 word *The Night Land* may be the most original work of science fiction ever published), they nevertheless have that quaint eeriness which still works. The major part of the seven stories here deals inevitably with horrors at sea (Hodgson was a seaman among many other unlikely things; he might be considered the Herman Melville of SF/fantasy), though one deals obliquely with H_2O with "The Terror of the Water Tank"—you may never feel at ease again if you live in an apartment building with a water tank on the roof.

"Eloi Eloi Lama Sabachtani," is something else. Certainly a lost masterpiece of early science fiction, it's an account of an attempt to reproduce the darkness that accompanied the Crucifixion and must have seemed just short of blasphemous at the time it was published.

The other new Centaur book is Galad Elflandsson's *The Black Wolf*. It's a minor Lovecraftian effort, without the master's density of texture. It certainly has its share of thrills and chills as it recounts the horrors visited on a small American town by the family of an 18th century sea captain who has brought home and married a near-

Eastern female werewolf.

There are a few annoying lapses of logic here; I must say it seems odd for an American town of the 20th century to view several attacks by a horde of slavering wolves as certainly disastrous but no more unusual than somebody's barn burning down. And from a personal point of view, I'm a little unhappy, considering how much we've learned about the nobility and beauty of wolves in the past two decades, to see a return to the bad press of the Little Red Riding Hood/Three Little Pigs mentality.

I'd complain about this small tale being published as an oversize paperback save for the advantage this gives the illustrations, which are quite wonderful in a modern Aubrey Beardsley kind of way. They are by Randy Broecker, and wrong only in the sense that they are a good deal more sophisticated than the story they illustrate.

Humor in SF is as rare as an elf in *Analog*, so I approached Randall Garrett's *Takeoff!* with some misgivings, since it's a collection of that author's humorous writings that are mostly satirical sendups of various popular SF authors, or "reviews" of noted books in the genre written in light verse.

I'm happy to say that while there are moments when Garrett descends to that level between freshman and junior, a lot of it is amusing even if I didn't do a lot of thigh slapping and gut busting. "Backstage Lensman," for instance, goes on a bit long; on the other hand, I was enchanted with "Master of the Metropolis" (co-authored by Lin Carter) which views a subway trip from Newark to Manhattan in the "Oh, the wonder of it all" style of Hugo Gernsback's *Ralph 124C41+*. (Irresistible to quote—on the *auto:* "So common were they to the favored children of this Mechanical Age that the gaily-costumed passers-by scarcely gave them a glance, even when crossing the streets through which the *autos* ran." And the hero, one Sam IM4 SF+, makes casual conversation to fellow strap hangers such as "Ah, Madam, how much vaster is our great Metropolis even than storied Nineveh, or Tyre.")

The Lovecraft pastiche is, in fact, rather a good story. The typical HPL device of the awful revelation of discovery by the narrator in the last sentence actually took me by surprise, partially because I was anticipating something funny, like a MacDonald's, and what is revealed ain't necessarily so.

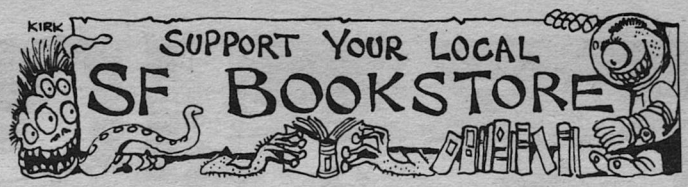
As for the "reviews" (more like synopses) in light verse, Garrett is no mean rhymester, and they're fun (the one for Anderson's *Three Hearts and Three Lions* actually has the accompanying music!).

And last but not least, there is a letter from John Carter ("Your Aunt Dejah sends her love") which is vastly comforting for those of us who were bitterly disappointed because those damned Martian photographs from NASA showed only rocks instead of ochre waves of dead-sea-bottom vegetation.

The flood of SF and fantasy "art books" has diminished, I think, but a few trickle in, and also on the humorous side is *Wanted: 22 alien criminals wanted by The Intergalactic Security Bureau* ("special humanoid edition"). This one's a biggie (11" X 16"); each double-page spread has, on the left, the wanted poster with front and side views of the face (or what passes for the face), the usual information, and a description of the perpetrator's heinous crimes, and on the right, a full color, full-page portrait. The joke wears a little thin, but I liked the Randor Sisters, who kidnap men for an intergalactic male prostitution ring; Dweezyl, who is 2-dimensional; Aelita Thx, who is physically addicted to all sorts of artificially produced energy; and Zvarmo, who telepathically masquerades as a call girl to rob his victims.

Three cheers! Four more Oz books are available in mass-market paperback. They are *Tik-Tok of Oz* (with the fascinating Langwidere, who can not only change her mind, but change her head for any one of thirty she has in a closet), *The Scarecrow of Oz, Rinkitink in Oz,* and *The Lost Princess of Oz* (oh, Ozma, not again!). The covers on these four are splendid, and the suspense is killing me as to whether the series will be continued to include those later Oz books by Ruth Plumly Thompson, which are now incredibly rare and quite delightful. (Does anyone know where to find a copy of *The Silver Princess of Oz,* the one about the metallic Planetty, princess of Anuther Planet?)

And, finally, a slight grump about *What If?,* an anthology edited by Richard A. Lupoff. Basically a sturdy collection with stories by stalwarts such as Tenn, Sturgeon, Wilhelm, and Anderson (and an old favorite by Damon Knight, "Four in One"), it bills itself as "Stories that should have won the Hugo." Now I'm dubious enough about awards in general, believing them in this day and age to be mostly economic ploys, but when we get into "should have wons" I throw up my hands.



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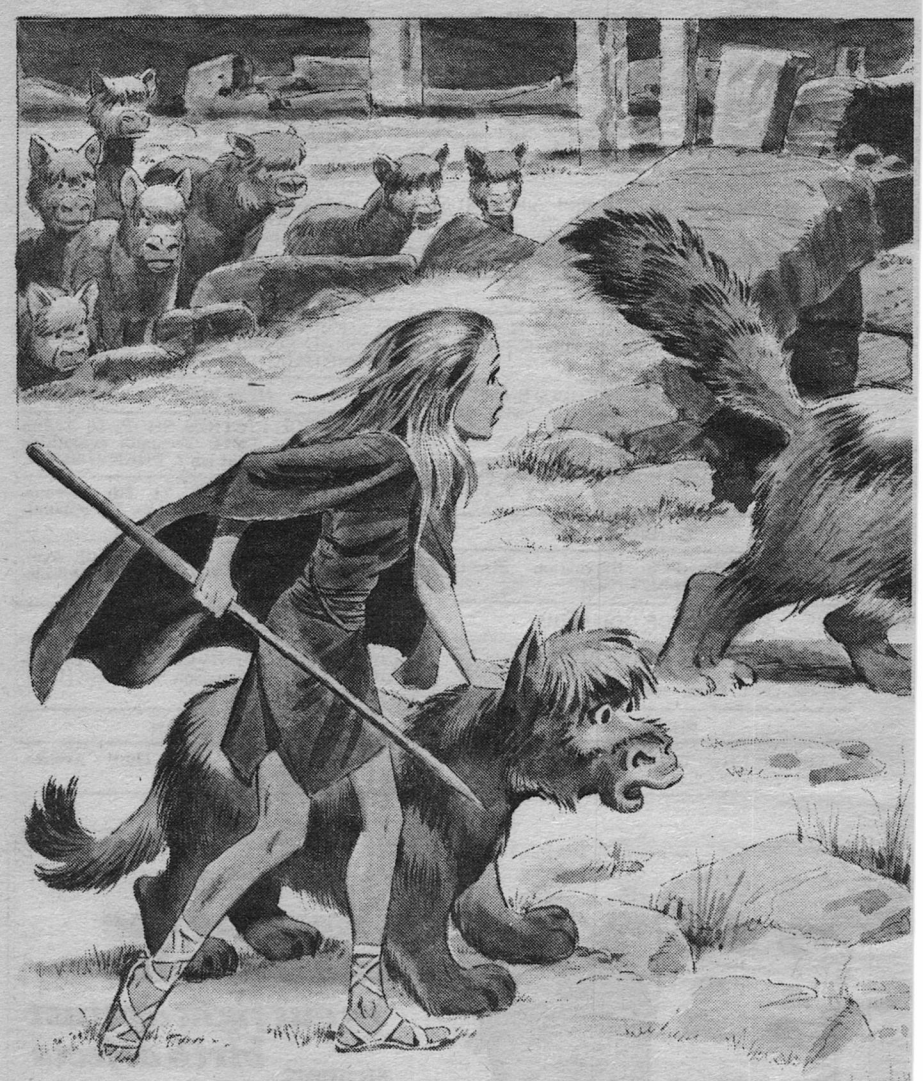
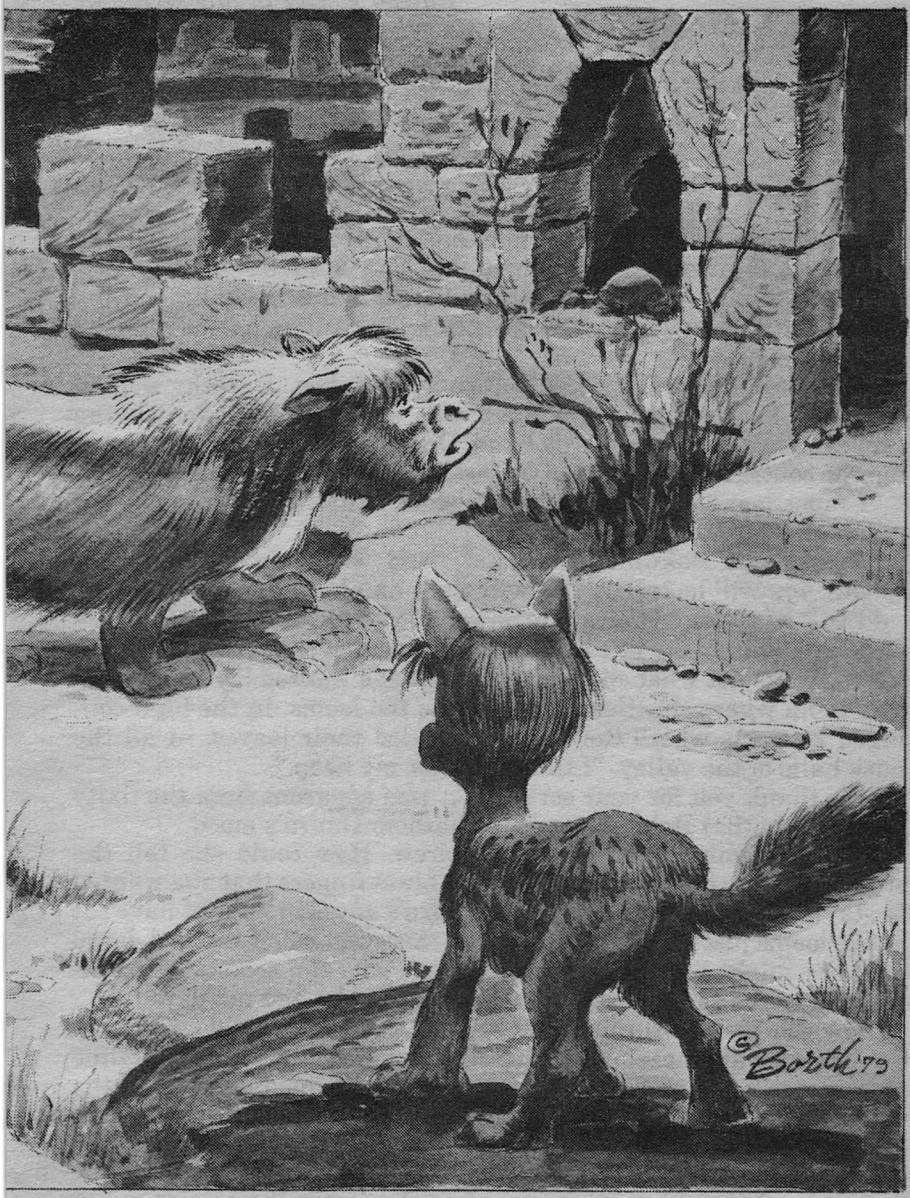


LAUGHING MAN

by Sydney J. Van Scyoc

art: Frank Borth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Earlier stories in this series are "Mountain Wings," "Darkmorning," and "Stonefoal." The author says that one incentive for continuing this series is that the illustrations for it fit so well on the walls of her new office—a converted dairy shed.

Leaving the valley felt like exile that morning. Summer had come and the sun warmed the growing fields. The last seed would go into the ground tomorrow. Dmira's plow teams had already broken the ground for it. Now her work was done and her animals were restless.

Still, the pain.

Juris Bakunia saw it when Dmira went to her. A stocky woman who wore her hair in a helmet of braids, she stood from her writing table and extended one sturdy hand. Dmira touched it lightly, marking the contrast of her tanned fingers against Bakunia's milky skin.

"I must leave today." The words were ritual. Each summer the redmane guardian said them.

"Yes," Juris Bakunia responded, "and when we see you next spring, you will be taller. You will walk like Noa."

"I will be taller," Dmira murmured. To stride through the stone-halls tall and remote like her ancestress, first of the redmane guardians—it was not what she wanted. What she wanted lay in the long airy room where shuttles moved across the looms, in the high-ceilinged kitchens where the bakers kneaded their loaves, in all the busy halls of the valley. "I thank you for my keep."

"We thank you for your service." It was apparent from the fixity of her smile that Bakunia could not fathom Dmira's mood.

Sighing, Dmira nodded and withdrew. How could she tell the stocky juris with her ice pale eyes and blunt fingers that she wanted to stay? Many generations before, Dmira's ancestors might have sat to the looms just for the asking. Even this summer, if she had dared ask, she might have been permitted to learn the secrets of bread-making or the skills of the woodsmiths. But she had not dared.

Now she hurried through the stalk-lit corridor, a slight girl with auburn hair and hazel eyes. This was her fifteenth year. Sometime this summer she must listen for her inner voices and undergo the rapid maturing process that would change her from slight adolescent to towering woman. When she came here next spring, she could not dodge among the people of the valley as a child. Next spring the valley people would stand in awe when she strode their fields in her

bronzed goddess's body.

A sob caught in her throat. She ran from the stonehall.

She had come with four teams of redmane, each team consisting of a mated pair. Soon after her arrival, the foals had been born. Their sturdy foal's bodies were fully maned now, their body hair a dense silvery coat.

The adult animals waited impatiently in their pen. The bucks were powerful, shaggy animals, their manes hanging to their padded feet. Only Dmira's daily grooming kept their long coarse hair from matting. The mares, who had pulled out their heavy coats and manes to make foaling nests, were clad in the same dense, soft underfur as their foals. Despite their muscular strength, none of the redmanes stood taller than Dmira's chest.

All were impatient. They pounded the floor of their pen and tossed their heads. Dender, the lead buck, shrilled at Dmira.

Dmira drew the gate and they padded past her eagerly, grunting with excitement. Instinct guided them down the stone avenue toward the southern edge of the settlement. Once, as they neared the plowed fields, Dender threw back his head and bellowed shrilly. The others echoed him with lesser shrills. They were eager to reach the plain where the herds gathered for bonding.

That morning as they padded south, the lower mountainside was bright with summer grasses and flowers. Tiny mountain animals clustered eagerly around clumps of blue savona, harvesting seeds. The redmanes paused to nibble the silver foliage and the four foals cantered away in a noisy game. Each time, when Dender summoned, they returned and the drive continued.

By midmorning the settlement in the valley was only a memory. But the pain did not die. Once Dmira's ancestors had lived in the valley and had heard the voices that called to valley people: the moaning siren call of the mountains, the incomprehensible mutterings of the winter dreams. Then Noa, who had never dreamed, who had never heard the mountain voices, had climbed Terlath and heard other voices, inward voices, and had become first guardian of the redmanes.

This much Dmira knew: the voices she must listen for would come from within and they would be her own; when she heard them, she would know their message.

Instead she wanted to hear the laughter of the valley people, the clatter of looms, the hundred small sounds of society.

Sometimes as she followed the redmanes south, it seemed she did hear them. She stood high above valley settlements, barely able to

distinguish structures and fields, yet the laughing voices of the people seemed as near as the spring where the redmanes drank. She fought the impulse to abandon her herd and run down the mountain.

At night it was worse. Then she saw the soft glow of stalklamp through unshuttered windows and occasionally she saw torches and roasting fires. Then the homely sounds of the valley swelled over her. She had to seize Tahnta, smallest of the foals, and hug her tight to dismiss the beckoning phantom sounds.

Her loneliness seemed to stretch forever. Yet forever lasted only three days. At noon of the third day, Dender began dancing playfully, shrilling, and the other adult redmanes brayed noisily. Dmira paused and peered down a gentle slope to a sunny meadow. Dark shapes browsed below.

Dmira surprised herself with a shriek of joy. Her heart leaping, she ran down the slope after the noisy redmanes. "Llada!" To be alone no longer, to have a friend to laugh with—

But it was a stranger who stood there, dark-caped, her limbs long and powerful, her face bronze. "Dmira," she said, her voice distant.

Dmira's pounding feet froze and her heart plummeted. How could she have forgotten that Llada had matured last summer, that she was a woman now, remote, attuned to her inward voices and to the redmanes she guarded? Never to run again, never to laugh again . . .

"You are slow, sister," Llada said as formally as if they had never shared summer mischief. "I expected to see you yesterday."

"I—I stayed in the valley an extra day," Dmira confessed, pulling her own grey cape tight around herself.

"Plowing was slow then."

"No. I stayed—" But how could she confess to a stranger that she had stayed simply because she had not wanted to leave? And that finally she had left only because she had to? "Will you travel with me a day before you go to First Council?" First Council was a gathering of those who were in their first year of full guardianship. It was the only year of a guardian's life when she would miss the bonding of the herds.

"One day," Llada said. "This day."

"But today is half gone! Make tomorrow the day, Llada."

"Today," Llada said firmly. "Give our animals time to greet. Then we must go or you will be late for the bonding."

Dmira wanted to argue. But what had she to offer Llada? The chatter of an adolescent.

Yes, let them talk about the bonding, about the weather—anything to bridge the chasm. "It rained last night where we were. The foals

ran in the rain." She had wanted to run too, to feel cool drops on her arms and face, to be young and free and wild.

She couldn't tell Llàda that either. And in any case, she had remained sedately under the rocky overhang with the adult redmanes.

Llada finally seemed to sense her conflict. She gazed at Dmira with remote concern. "This is your summer."

"Yes." Dmira wiped tears from her eyes before Llada could see them. "I'm listening already," she lied.

"But you don't hear," Llada observed.

"I will!" Dmira said passionately and turned as sounds from some distant valley swept up the hillside. For a moment she thought they would overwhelm her. *The whisk of a reed broom on stone floors, the impatient bubble of a cooking pot and the popping of overheated grease, the thump of children's boots, the call of a worker from the fields*—they were as distinct as if she stood in the middle of them. Stricken, she groped for Llada's arm. "Stay with me for two days—please! Just two days—we were friends, Llada. We played together!"

Llada was as embarrassed by the unexpected plea as Dmira. "Only today, Dmira. The bonding won't wait."

Nor would time, the time of youth. One last summer and she would be as passionless as Llada. Dmira drew back her hand. "I understand." But the words trembled.

They walked together that day, and now there were seven foals shrilling playfully and sixteen adult redmanes padding tirelessly. Occasionally Dender would pause and lift his head, scenting the air. Once he uttered a long, quivering cry, unlike any of his other cries.

"He's casting," Llada observed.

Dmira sighed, struggling against a despairing lethargy. "I don't understand why he does that—why he casts." He never listened for an answer and never seemed to expect a supporting cry from any of the herd.

"You'll know," Llada said. "You'll understand everything by the end of summer. You'll see many things in the redmanes you don't see now. And you'll understand why we guard them."

"I already know that," Dmira said irritably, chafed by Llada's inaccessibility.

"Then tell me," Llada shot back with the barest lash of temper.

"To protect them from being exploited." That was one of the first lessons a young guardian learned. "Before Noa, the people of the valleys were going to break the redmanes to the plow and keep them

penned in the valleys."

"They're broken to the plow now."

"But they plow for just a few weeks, and we're the only ones permitted to fasten the traces on them. The rest of the year they're free."

"They're always free," Llada countered aloofly. "They come to the valleys with us because we invite them, not because we drive them. They live in pens there because that is safer."

"And we protect them from the breeders," Dmira went on, frowning. "Before Noa, the breeders were going to work with the bloodlines and modify them as they modified their own stock—to make them more useful."

Llada nodded with maddening reserve. "Sister, that is what we protect them against. What you haven't learned is why we protect them against those things."

Mystery within mystery. Sometimes, rebelliously, Dmira wondered if it would matter so much if the breeders were given a few redmanes to work with. They numbered in the thousands in the southern plain and there were other plains too, many of them.

"By autumn you'll understand it all, sister," Llada said, terminating the discussion.

Well, perhaps she didn't want to understand. She would live as a guardian in either case, watching the redmanes in solitary silence through most of the year, spending spring with her plowing teams in valleys where she could never live, then traveling south for the bonding—someday bearing an infant, perhaps two, to relieve her loneliness.

If she could leave the animals now, this moment, and turn back to the valley . . .

The slap of children's feet on bare stone floors, the scrape of tanning tools across sheep's hide, the humming song of the workers who trimmed overgrown stalklamp, the damp swish of a string mop . . .

Dmira slapped her hands to her ears. Llada peered at her narrowly.

Dmira was relieved when they parted the next day at dawn. To be alone was less lonely than walking with Llada.

After they parted, she escorted Llada's herd as well as her own. Yet she was so torn she did little more than follow the redmanes as they picked their route toward the plain. Dender plodded tirelessly, his muscular legs pounding. The mares and their foals had to shrill at him to slacken the pace. Then while the adults rested, the foals danced up and down the sloping meadows, tossing their

auburn manes, whickering happily.

Dmira hardly heard them. She moved in a world of her own, a world of phantom music, the music of the valleys. After a few days she quit trying to dismiss the illusory clatter of pans and the chatter of children. She accepted the eerie snatches of conversation that followed her over mountainsides, through passes, across deserted valleys. She moved in a swirl of sound, as if all around her the people of the valleys worked and played.

Yet there were terrible moments, usually deep in the night. Then silence fell suddenly, dropping around her like a curtain, wrapping her in desolation. She lay stiff in her cape, cold with grief.

Some sounds seemed nearer than others. One was laughter. It was always a youth's laughter, soft, chuckling. Although the laughter came many times each day, she did not realize until the fourth day after parting from Llada that a youth's laughter followed her because a youth did.

All that day Dender called frequent halts while he scented the air and peered around. The foals took advantage of his preoccupation to play and the mares used the stolen moments to graze. The other bucks shared his vigilance, though to a lesser degree.

They came to a small valley late that day and skirted the foundations of fallen stonehalls. There was sadness in this valley. Its people had been driven away, whether by poor crops or some other disaster, Dmira didn't know. She had come this way before, but the poignancy of the valley had never touched her so deeply. Grass grew in the stone avenues and the breeding pens were deep with summer flowers.

Dender nudged Dmira, impatient to drive ahead. Instead she lingered, exploring crumbling halls, studying abandoned artifacts. Soon dusk shadowed the valley. Grumbling, Dender resigned himself and began shaping a night-nest. The foals continued to play, loping up and down overgrown avenues, their pads slapping softly. Sometimes they undertook a teasing game, running at each other, turning aside at the last moment, then darting back.

As they played, the laughter came again, from very near. Dender rose, lifting his head and peering around. A shrill warning sent the foals scurrying to cover of a half-fallen stone wall.

Dmira stood, groping for her pike. "What is it?" Dender had never given any sign before that he heard the illusory sounds that followed her.

Again the laughter, and a youth threw himself over a pile of rubble, smiling broadly . "It's just me—I won't hurt you."

Dender grew still, peering at the youth with baleful eyes. Nearby the rest of the herd imitated his rigid wariness.

So the laughter had been real. "You're the boy who's been laughing," Dmira said, startled into anger. "Why are you following me?"

"I've been laughing, but I call myself a man," he responded. "A man named Bron."

Dmira's eyes narrowed. "Did you think you'd frighten me, hiding behind boulders and laughing?" Was he a renegade? She had heard of those, although they were few.

His smile faltered. Despite his claim, he was a youth, sturdily built with glinting white hair and pale eyes. His mouth was wide and his chin was cleft. "Everyone knows a redmane guardian can't be frightened. Besides I didn't think you'd answer if I asked to walk with you. Everyone knows that when you speak to a guardian, she looks over your head and goes on walking."

There he spoke the truth. After a guardian's rapid flowering in her fifteenth summer, she was a remote personage. Dmira frowned, remembering Llada. "I'm not a full guardian yet."

That surprised him. "But you have twenty-three animals and you're leading them to the plain."

"I'm taking my herd to the plain and people call me a guardian. But I'm really just a guardian daughter still. Have you ever seen a guardian no taller than me?"

That struck him funny. "Have you ever seen a man no taller than me?"

"No. Most men are taller—and older," she said with narrowing eyes. "And they don't hide behind rocks laughing."

His smile died, to be replaced by quick contrition. "I'm sorry. I've been drawing your animals, and the foals are so clumsy when they play. The little one—Tahnta—is the only one who doesn't look like she's going to go barreling right down the mountainside when she runs."

"They're as graceful as any other animal," Dmira retorted—a lie. The great predators of the mountain moved with hypnotic stealth and the small seed gatherers flickered across the meadows with nervous grace, but the redmanes moved with sturdy utility.

"They could be. But you haven't seen my drawings. Let's build a cookfire and I'll show you."

She hesitated. Dender, she saw, had turned back to his nest, signalling the other adults to join him. "I never use a fire. I eat raw things."

"Like your animals? You never cook anything?"

She looked up at him almost timidly. Each time she left the valley, she yearned for cooked food, as much for the aroma as for the taste. "What do you have?"

He shrugged. "I was going to make soup. I found soup thistles when we came through the pass and I piked a brace of rockfowl. I know there's string grass along the tops of some of the walls, but it's almost too dark to climb for it."

She peered toward the ruined walls he indicated. She could barely make out white tendrils clinging there. "I'll climb," she said. "You build the fire." Her stomach clenched in anticipation. He would have spices in his pack and perhaps cheese. She always took bread when she left the valley, but the kitchen master never offered her cheese. Perhaps he thought guardians didn't like cheese.

Perhaps they didn't. She had never heard Llada yearn after it as she did.

Bron carried both spices and cheese. They unearthed a large clay-pot from the ruins and cleaned it. He kindled a fire. The soup he cooked was thick and filling. Afterward he took a skin from his pack and unrolled it almost reverently. "I make these with charcoal. I sharpen it to a point so I'll get a distinct line. Sometimes it smudges anyway."

She glanced at his charcoaled skin politely, then with kindling interest. His drawings portrayed an animal she had never seen before: long-legged, at once graceful and powerful, its strong neck arched, its beautifully formed head held high. Its slender legs ended in tiny hooves and a dark mane fell across its arched neck.

It was a creature of consummate grace. It looked somehow as if it should fly, as if the fleetness of its lines should release it from gravity. Yet it was muscular, with powerful hindquarters.

It was also an animal that did not exist. "Why do you draw animals no one's ever seen?"

"People have seen these animals. They were called horses—before they became redmanes."

Unconsciously Dmira glanced up at her herd. She could see a fleeting resemblance. Beneath their heavy coats and tangled manes, the redmanes sometimes showed a rebellious grace. She had seen it at bonding time, when bucks and mares courted by rearing on their hind legs, tossing their manes ceremonially, their front feet jabbing the air. And there was the same power in the hindquarters, the same strength in the shoulders and neck.

But there the resemblance ended. Bron's animal carried dainty hooves; redmanes walked on calloused pads. Bron's animal had a

long neck and long slender legs; redmanes had stubby necks and squat legs. And there were other differences. "I've never heard of these animals—horses."

"Not many people have. Here—" He sorted through his pack and drew out a second skin. Dozens of tiny figures decorated it: horses, redmanes and animals which were at once both and neither. "When the first people came, when their ship was stranded—you know the history of first times?"

"My mother told me." There had been little enough to tell: the ship bound outward from the legendary Earth, the failure in the powerful device that drove it, the forced landing on mountainous Brakrath. Then came the story of early hardship and a slowly developing ability to wrest survival from a harsh world. Tens of centuries had passed and the people who once had been fit to survive on Earth had changed and become fit to survive here.

"Well, they carried horses with them the same way they carried sheep and soupfowl and other animals—in embryo form in incubation chambers. A lot of the chambers were damaged but they were able to incubate sheep, soupfowl, a few other animals—and horses.

"The sheep and fowl gave them milk and eggs. The other animals died out. The horses gave them labor, but there wasn't enough food for them. Finally they had to drive them out of the valleys and the horses went to the plains. And they changed." His fingers skimmed down the charcoaled skin and she saw then the connection between the dozens of tiny figures. Gradually the horse depicted in the first figure altered, becoming smaller, stockier, densely coated, giving up his delicate hooves and graceful head for the pads and compact head of the redmane.

"No," she said, disturbed by what he said. "That isn't true. The redmanes have lived in the plains forever. They've never changed. They're a Brakrathi form."

He gazed up at her, smile yielding to an intent frown. He rummaged through his pack and came up with a third skin and a sharpened fragment of charcoal. "My grandmother is Juris Hepath of Valley Morlath. You've heard of Valley Morlath."

"The first valley," Dmira murmured. "The valley where people first lived."

"Yes. The early scrolls are there, the ones transcribed from the records of the first people. That's where I learned about the horses. There were drawings of them. There were drawings of the first people too." Quickly he bent to the skin. He caught his lower lip in his teeth, concentrating as he drew. He displayed the finished draw-

ing with a flourish.

The face that looked at her was neither a face of the valley nor a guardian's face. It was human, but there were so many small differences—of feature, form and proportion—that the overall effect was completely alien.

"That was Mingail, one of the first jurises. That's how people looked before the changes. Before they became Brakrathi." He peered at her intently. "Well, the horses changed just as much."

Mingail's alien eyes held hers. Dmira shook her head, as if resisting a spell. "Then why was I taught the redmanes have been forever?"

"People have always been taught things that weren't true."

"But a guardian knows," Dmira insisted. "Once she hears her voices, she knows everything about the redmanes. She understands their laws and their instincts. If they had been horses, someone would know. My mother—"

"Have your voices told you they weren't horses?"

"I haven't heard my voices yet."

"Then you don't know," he said, rolling up the three skins, returning them to his pack. "Your mother has told you one thing and now I've told you another. I'm the one who has seen the transcribed records."

She drew back from him then, disturbed. The guardians spent their lives with the redmanes, but the guardians themselves had not been forever. They had sprung from valley stock, first Noa, then others appearing tall and bronzed from a stocky white-haired people. How could they have total knowledge of the redmanes when the redmanes had lived in the plains long before there had been guardians?

She looked up and found Bron gazing at her, a gleam in his eyes. She shivered with premonition. "What are you going to do?"

He laughed sharply and scooted nearer the fire, his entire body taut with excitement. "I'm going to take a valley and bring redmanes to it. Then I'm going to give them the food they need and warm barns. I'm going to give them all the things they need to become horses again. And they will."

He was a breeder. Enemy of guardians and redmanes. Her fists clenched, one closing around her pike. "You will never take a redmane from the plain." She hardly recognized her voice: harsh, menacing.

"But why?" he demanded. He wrapped his arms around his knees, hugging himself. "There are thousands of them. I won't take

many—I won't need many. And I won't harm them. I'll care for them and I'll guard them."

"From what? Other breeders—like yourself?"

He saw then that she clutched the pike. His eyes widened. "I'm not a breeder. I'm a guilded scribe."

"You talk like a breeder."

"You've talked to breeders then?"

She shifted uncomfortably. "I would never speak to one."

"Then you don't know how they talk. They use words no one but guilded breeders understand: recessive, dominant, allele, phenotype. I know because I've scribed for them. I don't talk that way."

"Your thinking is the same," she said flatly. Why else had the guardians come to the plains, except to protect the redmanes from exploitation?

"No, my thinking is entirely different. The breeders would breed large numbers of animals and select the offspring showing the best characteristics, then breed those. And that would go on for generations. All I'm going to do is give the redmanes a safe valley where they can become horses again. Because I know the horse is still in them. I can see it. All it needs are the right conditions—warm barns, plenty of grain and hay—"

Was he blind? "Do they look like they're starved?"

"They're well fed on Brakrathi grasses and seeds. I'm going to give them valley grains and hay."

She blinked at him stupidly. To her, life in the valleys seemed warm and secure—for a moment she was distracted by ghost music: *the chink of a stonemason's mallet, the shriek of children at play*—but she knew there was no surplus. There was enough to keep the people and the necessary stock, no more.

He seemed to read her mind. "I'll raise the crops to feed them myself—here. I'll burn off the native plants. Then I'll harness the redmanes and plant the things we grow in the valleys and they'll eat them. They'll eat the same things the first horses ate. Then I'll repair the stonehalls and use them for barns. I'll heat them when the nights are cold and in the winter I'll take wintersleep there with my animals. And the horses will come out. They changed because horses couldn't live on the plains. But they can live here, with me. There will be no reason for the new foals to be redmanes."

He was insane. Firelight flickered across his face, making his eyes blaze. His white hair gleamed.

He was insane and she could see horses dancing in the flames of the cookfire.

"Here," she said.

"Yes, here."

Here, in a valley of their own. That quickly the compact was sealed. Neither of them had to say more.

"But we'll have to take them to the plain for the bonding," she realized later, when they had talked out the first of their enthusiasm. "They won't mate otherwise."

He studied her owlishly. They had extinguished the fire and nested themselves near the herd, drawing on the body warmth of the redmanes. "No one from the valleys has ever seen the bonding."

Dmira quivered, unconsciously reaching out to stroke Tahnta's neck.

"The people are afraid to go near the plains," he elaborated. "They're afraid of the guardians."

Yes, she knew that. Much as he knew about horses, he knew little about redmanes. They had been well-guarded from curious eyes, more by legends of the guardians' implacability than by any real force.

"Can you take me there?" he asked finally, when she still said nothing.

She sighed deeply. For a moment valley sounds seemed to wash between them. But they were the sounds of this valley when it had lived—and the sounds of it when it would live again. She hugged herself greedily. *She would have her own valley. She would take wintersleep in a stonehall, she would spin and weave, she would eat cooked foods—she would never be alone again.*

"Can you?"

She nodded. She would take him.

They left early the next morning, waving back at the empty valley as if it were already inhabited. The redmanes trotted ahead eagerly, spurred by Dender's impatience. Dmira and Bron followed, building dreams. . . .

They harvested their first crops and saw their first foals born. They built up a herd of sheep to feed and clothe themselves. Soupfowl nested and gave them eggs and down. Soon the entire valley was populated. People laughed through the renovated stonehalls, sweeping and cleaning. Men and women appeared in the fields to help with the crops. Children ran after black-maned foals, laughing. Some of the children had glinting white hair. Others had the auburn hair of the guardians.

The valley sang. . . .

They walked together behind the redmanes, hardly noticing when

cold rains caught them, barely aware of the tenderness of their muscles as the redmanes increased their pace and led them swiftly through mountain passes and down steep trails.

There were horses in the redmanes and Dmira and Bron would draw them out.

They followed the redmanes south and Dmira began to grow. Her eyes darkened. Her fingers, which had been delicate, became long and strong. Her hair spread in a dense mass across her broadening shoulders. Each morning she had to wrap her shift differently. Yet neither of them noticed. They were lost in the dream.

Bron knew everything about horses. He talked about them endlessly.

Sometimes Dmira listened eagerly. Other times she listened with tingling anxiety. She wanted to believe in the emergence of the horses from the redmanes. She wanted to believe in their valley. She wanted desperately to believe in a life without loneliness.

But there were things Bron seemed not to know.

The bonding . . .

Whenever she thought of it, she caught Tahnta in her arms and nuzzled the foal's velvety neck for comfort. If they could all step firmly into Bron's insanity and remain there, perhaps Tahnta would be mother of the first horse.

On the fifth day they began to see signs that other herds had passed recently. Dender paused often, scenting the air, then shrilled eagerly and led his herd ahead.

"What will the guardians do, if they see me with you?" Bron asked as they sat over roast fowl that night. He had been distracted all day, peering around tensely, as if he trespassed in a predator's den.

Dmira had been waiting for the question. "Nothing."

He glanced at her sharply. "Then why are they guardians? If they don't keep valley people from following the herds to the plain?"

"They will guard the redmanes if you interfere in the bonding or in the mating. Otherwise they'll do as they always do when they see you."

"They'll just look over my head—and walk on?"

"Yes. Of course we'll have to be careful later, when we take our animals back to the valley." She did not see his quick relief. She was gazing dispassionately at her hand where it lay against Tahnta's soft flank. She had achieved a state of consciousness which permitted her to look at her hand without consciously observing that it had become a woman's hand. Today she had washed her face in a clear blue pool and had not seen that it had become a woman's face.

Earlier she had adjusted her shift without noticing her woman's breasts, newly emerged.

Had Bron noticed? Or had he been too blinded by visions of horses?

They sat for a long time in silence. "We'll reach the plain late tomorrow," she said at last. "There are things you should know. You've told me about the horses, about their ways. The ways of the redmanes are different."

"I know that."

"You don't know how different. The bonding—"

"It's only natural they would develop new ways of behaving. We don't live the same way the first people lived. If they hadn't changed, we wouldn't be here because they would have died. The horses would have died too if they hadn't changed their ways."

The space of a long breath passed. Finally Dmira nodded. Perhaps it would be all right. Still she hugged Tahnta close that night as she fell asleep.

It was late the next afternoon when they stood on a promontory overlooking the edge of the plain. Below them redmanes stretched as far as the eye could see, a massed assemblage of thousands. Dender nudged Dmira farewell and led his herd down the trail, shrilling. From below came answering shrills, hundreds of them, piercing, excited. Only Tahnta lingered for a moment. Dmira clung to her, then sent her on her way with a playful slap. Tossing her head, mane flying, Tahnta loped after the others.

The massed redmanes gave the appearance of a solid field of grey, but the animals moved constantly, shrilling at each other, rubbing necks, chewing manes in greeting and courtship.

"They've already begun pairing." If only she could preserve the dream of their valley with the scent of courting redmanes in the air . . . Below pairs of animals rose on their hind legs, jabbing the air with padded feet, tossing their manes. Foals darted among the courting pairs in noisy excitement. "You can see the guardians if you look."

Bron shielded his eyes against the late afternoon sun. His voice was hoarse. "Where?"

She pointed them out to him. They patrolled the fringes of the giant herd, tall and impassive in their dark capes. Mnonna, Letha, Wolla, Paz—they were unchanged in all the years since Dmira had watched her first bonding from a sling on her mother's back. They were eternal, silent figures drawn directly from time.

Bron's tongue darted out, wetting his lips. "Will you have to go down there?"

"No, I watch from here. Usually my mother comes here too and her mother." Raising her head, she tested the scent of the redmanes. It had already become perceptibly more acrid. "We were probably the last to arrive. We had the farthest to come. The bonding will be tonight."

"And we—can we watch?"

He had no conception of the event. She peered down at Mnonna's straight back, the copper hair hanging down it in a bright mane. "Guardians and guardian daughters always stay for the bonding."

They sat atop a prominent boulder until sunset. At first they made feeble attempts to conjure up dreams of their valley. The images refused to take life so they watched the sun down in silence, strangers. Below the redmanes courted in happy frenzy.

I will not belong to the herd, Dmira vowed. *I will not belong to the plain. I will belong to our valley.* Yet as dusk masked the courting herd, a sense of oppressiveness fell over her. The herds were bred into her blood. Soon, if she refused to listen voluntarily, her voices would break through her defenses and she would become like Llada anyway, passionless, distant—alone.

Bron clutched her arm, his breath hissing. "Dmira—behind us." The fear in his voice was electric.

Dmira turned. Sadara, her mother, had appeared upon the prominence. Beside her stood Kiele, Sadara's mother, and Tanama, an elder relative. They stood in silence, their dark capes covering them, their faces shadowed. Dmira knew she should leave Bron and stand with them.

She remained upon the boulder, drawing on the warmth of Bron's body for strength.

With darkness the plain became still. Courting bucks and mares fell to all fours and stood motionless. Even the foals ceased their running and shrilling. Thousands of animals became as stone, waiting. After a while, the silence was complete—terrible. Dmira wanted to scream, to break the spell. Beside her Bron had grown rigid. He hardly seemed to breathe.

The Nindra appeared over the crest of the distant mountains, her silver face looming silently in the dark sky. She cast a glimmering radiance over the redmanes. The animals raised their heads, shrilling and tossing their manes. Suddenly they were like foals, loping and cantering around the plain, necks arched, feet kicking. They played teasing games, charging at each other, darting away. Some danced on their hind legs, flailing the air with their manes.

Over the sound of thousands of celebrating animals, Dmira heard

Bron laugh. "You can see it now!" he shouted. "You can see the horses in them!'

She could see the grace, the swiftness, the beauty. The stocky bodies, the tangled manes, the heavily padded feet became insignificant. Below horses ran and played.

Then Zan's silver rim appeared above the mountaintops and the redmanes grew still again. They stood in frozen silence until the second silver circlet cleared the mountains. Dmira could feel Bron's impatience for the dance of horses to resume.

But now both moons glided up the black sky and it was time for the bonding. Thousands of redmanes uttered a long quivering sigh and began to stamp their feet.

They stamped in unison. At first the beat was slow, a gentle pounding that reverberated across the plain like the beat of an earthen heart. Dmira drew up her feet, shivering. The stamping grew stronger, more emphatic, gradually accelerating. By the light of Nindra and Zan, she could see that her kinswomen had spread their feet, bracing themselves against the softly vibrating earth. She shivered, trying to resist the reverberation that reached her through the boulder. If she could remain here, outside the bonding—

Bron clasped her arm. His eyes glazed, he slid off the boulder, pulling her with him. When his feet touched ground, he spread them as the guardians did. Dmira could tell from the slow heavy rise of his chest that his heart had slowed to match the beat of the plain. Dmira felt a pang of dread. If only she had warned him . . .

His grasp seemed light, but when she tried to break it, his fingers were like bands. She was forced to stand with him upon the pulsing soil.

Now the redmanes pounded the ground harder, faster. Dmira held her breath, trying to prevent her heartbeat from synchronizing with the beat of the plain. But as the stamping continued, her will seeped away and she felt her heart rhythm alter.

The pounding of thousands of feet went on and soon all were one: redmanes and guardians, soil, mountains, and moons. They bonded.

Still the feet pounded. Leadenly Dmira lifted her own feet and joined the drumming rhythm. Beside her, Bron stamped too, his face like chiseled ivory. Would he laugh again, ever? Would he dream again?

The feet pounded, faster and faster, until the beat of every heart was swift and dizzy. Dmira's blood raced fiercely, singing through her ears. Then the feet moved faster and the singing became a buzzing, the buzzing a whine, and at last her heart was beating a

useless frenzy, her knees gave, and she fell.

She lay stretched upon the throbbing soil as the pounding continued. Bron fell beside her with an inaudible moan. They lay with eyes open, staring at one another blankly, all thought erased.

Nindra and Zan hung in the summer sky until they were replete. Then, silently, they sailed away. The stamping died and the redmanes shrilled, a piercing climactic cry. Numbly Dmira put a hand over each ear. Bron lay in shock, staring at her stupidly.

At last it was quiet again. Dmira stood, painfully. After a time, Bron stood too. The redmanes who still lived moved slowly southward in a body, their heads hanging, their sides heaving. They left their dead without a glance. Dmira turned. Sadara and Kiele stood again, wrapped in their cloaks. They peered down at Tanama, who did not move.

Bron spoke numbly. "They—died. Hundreds of them died." Although his face was like carved stone, tears welled at the corners of his eyes.

"Yes. Bonding is the time when redmanes die—and guardians." When the heartbeat of the plain became too frenetic, the weak fell and didn't rise again. Dmira could not see Tanama's face. It was deeply shadowed. But she knew its expression, the startlement, the rapture.

The tears slipped down Bron's face, pale droplets of horror and grief. His face twisted. *"They were never horses! The redmanes were never horses!"*

Dmira's heart clenched. Could it slip away so easily, her valley? "The changes—" she offered weakly.

"No! I saw horses in them because I couldn't find them anywhere else. But they were never there. They were never in the redmanes." He looked as if he wanted to hit her. His shoulders clenched and his fists were white. With an angry sob, he scooped up his pack and plunged away, running through the starlit night, fleeing horses that weren't.

She started after him. But she had seen the anger in his eyes. If she caught him and it turned to hatred—

Sadara had moved forward, seemingly blind to Dmira's distress. "So you have heard your voices, daughter," she said dispassionately.

"No." She didn't think about her response. She still saw Bron too clearly, his horror, his tears.

"You have the look of a woman," Sadara said. "So we have lost one guardian and gained another tonight."

"No." But if she had not matured, why did she stand as tall as

her mother now? Why were her hands as brown, as strong? Why were her shoulders as broad? Still stunned by Bron's flight, Dmira held her hands before her. Starlight touched them with cool strength. They were the hands of a woman, of a guardian. She met Sadara's shadowed gaze, confused. "I didn't hear my voices. And I—I don't know anything about the redmanes I didn't know before. I don't know—" But how could she say what she had not learned? Those insights had not come.

She had matured, yet she had not become the guardian her mother was. They had lost Tanama and they had not gained Dmira.

"You heard nothing at all, granddaughter?" Kiele inquired quietly. Beneath her cape, her body was as strong as her daughter's. There was no trace of age upon her face, only a softening, as if the stern impassivity of a guardian eroded slightly with age.

"I heard—I heard sounds," Dmira said finally. Encouraged by her grandmother's quiet interest, she told them then of the valley music that had followed her, of the valley dream she and Bron had shared, of the yearning she had—had long had.

"Then those were your voices and that was your dream," Kiele said finally. "You listened and that was what you heard."

"That is what you will live," Sadara agreed. "If you were meant to be a guardian, you would have heard other voices. They would have called you here."

"I don't want to be here," Dmira confessed miserably.

"Then you must not be," Kiele said. "Sometimes it happens. We bear a daughter who has other purposes. She must pursue them."

Leave the plain then? Leave the redmanes? Why did she feel such emptiness? "But I—I don't know where to go. I don't know what to do."

"You'll learn," Sadara said. "Or if not, your daughters will. Not everything comes in a single generation."

"No," Dmira said softly. That she recognized as truth.

Sadara clasped one hand, Kiele the other. Then they parted, and when Dmira looked back they stood tall and impassive by starlight. Did they feel any of her sadness? She would never know.

She was not a guardian.

She found Bron in the ruins of their valley six days later. As she came down the mountain's last slope, she saw him in the distance, his white hair glinting, his back bare to the sun. He was working at one of the ruined buildings, patiently fitting its fallen stone back together. The wall was shoulder high in some places and soon it would be taller.

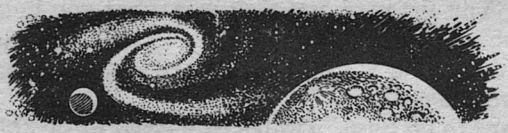
He turned silently when she approached. Perspiration stood on his bare chest. Somehow, although he had not grown, he seemed a man now—but not a man who had ever laughed.

One of them had to break the silence. "You've worked hard," Dmira said.

He sighed, holding out blistered hands. "I had to start right away to get it finished before wintersleep. First thing next spring I'll look for the horses again. I know they're here somewhere. There were hundreds of them, Dmira—hundreds of horses turned out of the valleys. I'll find them."

"We'll both look," she agreed. She couldn't live in his dream as fully as she had before. But perhaps there were horses. And even if there were not, there was the valley. Others would join them and they would make it live. One day she would learn why she was here.

She lifted a rock, set it into place, and the valley sang.



The Fossilot

You cannot find a Fossilot
Except in ancient stones
Where imprints of its teeth and claws
Lie jumbled with its bones.

Some scientists cleaned up the bones,
Arranged, then tried to date them.
But when they had the jaw complete,
It turned around and ate them.

—Jane Yolen

G. HOVAH'S DECISION PARADOX
by Martin Gardner

A real paradox is one that remains
insoluble, no matter how much
one worries over it.

After twenty years of work, Professor G. Hovah, the eminent Israeli physicist who won a Nobel Prize in 2074 for inventing the neutrino microscope, finally perfected his notorious decision prediction machine. Working details are too technical to explain, but essentially the device scans a human brain with three mutually perpendicular neutrino beams. Information on all electrical activity inside the skull is then analyzed by a powerful bubble computer. When any person is faced with a decision between two mutually exclusive courses of action, the machine can predict with amazing accuracy how he or she will decide.

For several months, Professor Hovah had been working with an amiable subject named Abraham Schwartz, obtaining an average success of 98% for all predictions.

"I have a new and curious test for you today, Abe," said the professor. "Observe that there are two boxes here on the table: one transparent, one opaque."

Abe nodded as he took his usual seat beside the table. Hovah moved the three neutrino guns to within a few centimeters of Abe's forehead, his left temple, and the crown of his head.

"As you can see," Hovah continued, "there is a hundred-dollar bill inside the transparent box."

"And the opaque box?" Abe asked, pointing his finger.

"At the moment it's empty," said the professor. "But let me explain." He glanced at his wrist watch. "One hour from now I'll ask you to make one of two choices. Either choose the opaque box only, or choose both boxes. If my machine predicts that you will take the opaque box, I'll put inside it a check sufficient to pay for four years of your son Isaac's education at any university of his choice. The check will be yours."

"Marvelous!" grinned Abe. "This test I like!"

"However, if my machine predicts you will take both boxes, I'll put *nothing* in the opaque box. Of course you'll be certain then to get the hundred dollars."

Professor Hovah pushed a button and the machine buzzed for a few seconds. Then he picked up the opaque box and left the room.

A half-hour later he returned to put the box on the table beside the transparent one.

"The computer has determined how you'll probably decide," he said. "But think it over carefully. You have twenty minutes to make up your mind. Of course you must not touch either box until you make your choice. Everything is being videotaped. If the opaque box is empty now, it will be empty then. If it has the check inside it now, it will be there when you open it. Good luck, my friend."

After Hovah left, Abe fingered his beard and stared at the boxes for several minutes. "I've been tested a hundred times with this infernal machine," he said to himself, "and it was almost always right. So I should take only the opaque box. The odds are better than nine to one that I'll get the big check. On the other hand . . ."

Abe suddenly realized that there was just as good an argument, maybe one even better, for taking *both* boxes! What is the argument? Turn to page 91 for the answer.

THE SF CONVENTIONAL CALENDAR
by Erwin S. Strauss

There's one last frantic month of SF con(vention) activity before the holiday lull. Get out to a social weekend with your favorite SF authors, artists, editors and fellow fans. For a longer, later list, and a sample of SF folksongs, send me an addressed, stamped envelope (SASE) at 9850 Fairfax Sq. #232, Fairfax VA 22031. The hotline is (703) 273-6111. If my machine answers, leave your name, area code and number SLOWLY. I'll call you back. When writing cons, enclose an SASE. When calling them, give your name and reason for calling right away. Look for me as Filthy Pierre.

WindyCon. For info, write: **Box 2572, Chicago IL 60690.** Or phone: **(312) 929-3395** (10 AM to 10 PM only, not collect). Con will be held in: Chicago IL (if location omitted, same as in address) on: 24-26 Oct., 1980. Guests will include: Robert Sheckley, Wilson Arthur (Bob) Tucker, Gardner (Strangers) Dozois. Usually the biggest Midwestern con of the year.

MileHiCon, (303) 433-9774. Denver CO, 24-26 Oct. Stephen Donaldson, R. Tackett, Ed Bryant.

MapleCon, (613) 745-5009. Ottawa, Ont., Canada, 24-26 Oct. Gordon R. Dickson, Jan Finder.

FenQuest, (716) 372-6814. Allegany NY, 24-26 Oct. All-weekend, live-action role-play game.

World Fantasy Con, (717) 684-3935. Baltimore MD, 31 Oct.-2 Nov. Jack Vance, Boris Vallejo, Robert Bloch. The WorldCon for the serious fantasy fan, honoring Poe in his home town.

HallowCon, (703) 273-6111. Hempstead NY, 31 Oct.-2 Nov. I*S*A*A*C A*S*I*M*O*V, phone call to Roddenberry. A Star Trek/SF con, if the World Fantasy Con is too heavy for you.

SciCon, (804) 380-6595. Norfolk VA, 7-9 Nov. Kelly and Polly Freas, Robert (Horseclans) Adams, Hank (Starblaze) Stine. Masquerade, martial arts demonstration, folk concert.

Conclave, (313) 996-0934. Toledo OH, 14-16 Nov. Joan Vinge, Joan Hanke Woods. Intimate con.

PhilCon, c/o Lawler, 2750 Narcissa Rd., Plymouth Meeting PA 19462. Philadelphia PA, 14-16 Nov. Bova, Freas, Sheckley. The oldest SF con, back home in downtown Philly once again.

OryCon, Box 14727, Portland OR 97214. (503) 761-8768. 14-16 Nov. Fritz Leiber, F. M. Busby.

Darkover Grand Council Meeting, Box 7501, Newark DE 19711. (302) 368-9570. Wilmington DE, 28-30 Nov. Marion Zimmer Bradley, Katherine Kurtz. The 3rd annual. First Delaware con.

LosCon, c/o LASFaS, 11513 Burbank Blvd., N. Hollywood CA 91601. Anaheim CA, 28-30 Nov., 1980. Larry (Known Space) Niven. The Los Angeles Science Fantasy Society's annual con.

Last Con, c/o Connell, 50 Dove, Albany NY 12210. (518) 434-8217. 23-25 Jan., 1981. Hal (Mission of Gravity) Clement, Jan Howard Finder. After two cons in 1979, Albany is back.

AquaCon, Box 815, Brea CA 92621. Anaheim (Disneyland) CA, 12-15 Feb. Philip Jose (Riverworld) Farmer, William Rotsler, Jan Bogstad & Jeanne Gomoll of JANUS. Costumes.

StellarCon, c/o Allen, Box 4-EUC, UNC-G, Greensboro NC 27412. 27 Feb.-1 Mar. Masquerade.

LunaCon, Box 204, Brooklyn NY 11230. Hasbrouck Heights NJ (near New York), 20-22 Mar.

SatyriCon, Box 323, Knoxville TN 37901. 3-5 Apr. Anne (White Dragon) McCaffrey is a guest.

CineCon, c/o Sp. Age Books, 305 Swanston, Melbourne 3000 Vic. Australia. 663-1777. Easter.

InConJunction, Box 635, Galveston IN 46932. Indianapolis IN, 3-5 July. P. Farmer, Tucker.

WesterCon 34, Box 161719, Sacramento CA 95816. Held over the July 4th weekend in 1981.

Denvention II, Box 11545, Denver CO 80211. 3-7 Sep., 1981. C. L. Moore, Clifford Simak, Rusty Hevelin, Ed Bryant. The 1981 WorldCon. It's not too early to start planning summer vacations.

THE EMPIRE TALKS BACK

by Algis Budrys

photos by George Whitear & Davis Steen

Before you read the following review, we think you should know that at the end of a screening of The Empire Strikes Back *in New York, a man in the audience stood up and yelled, "Start Part Three!" Dr. Asimov claims it was he.*

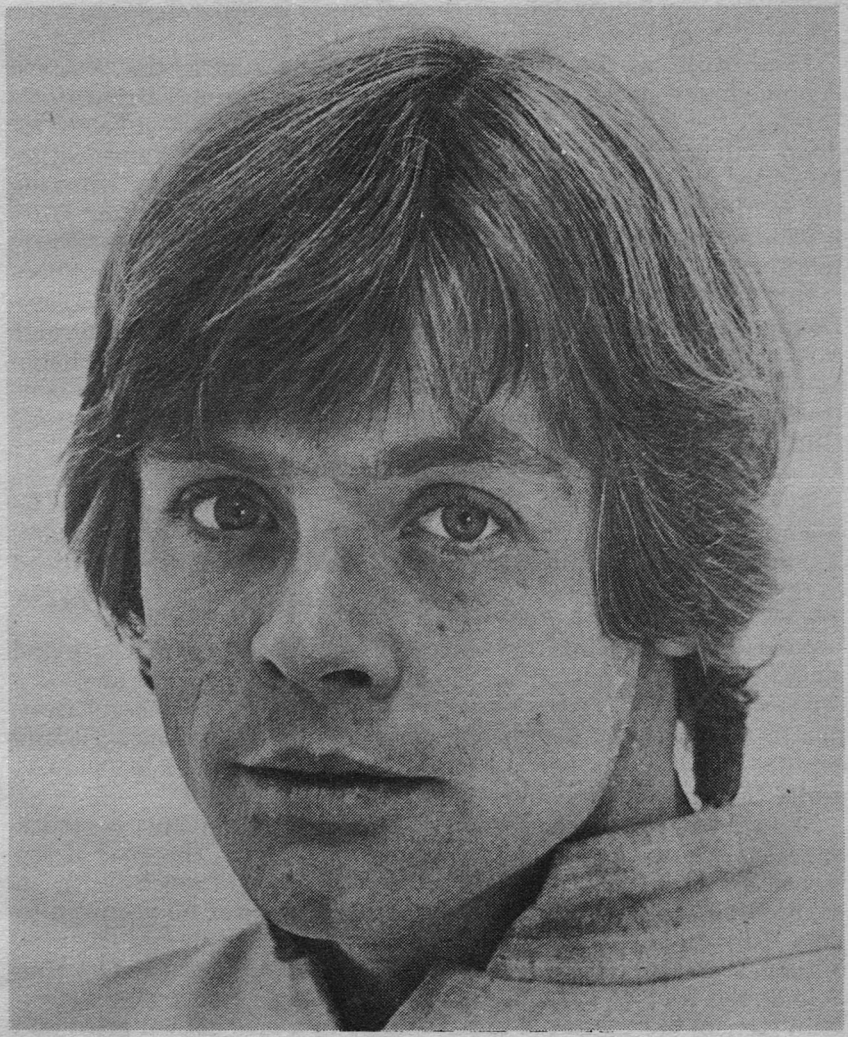
The Empire Strikes Back is the most proficient *Star Wars* ripoff I have seen to date. I jumped around in my seat, and after I had left the theater I operated my car as if it were at least the *Millennium Sparrow,* and many individual moments remain happy in my mind. But before I was all the way home, I let some suburban matron in a Cadillac beat me into a clear space in the lefthand lane. My mind was on what I'd market for at the A&P.

To explain this, I cast my mind back to Sergei Eisenstein, the director who knew more about movies than even D.W. Griffith or Orson Welles.

Someone, the story goes, once complimented Eisenstein on the superb performances he evoked from his actors. Shortly thereafter, Eisenstein produced a short reel of (silent, black-and-white) film. It opened with a plate of food, and then a cut to an actor's face registering hunger. It cut back to a pile of money, and then to an actor's face registering greed, before cutting back to a shot of a girl, and back to an actor's face registering lust. The point was that it was always the identical shot of the same actor, spliced into the film three times. I wasn't there, but I can see Eisenstein explaining this, smiling just a little, and turning away whistling the love theme from the Odessa Steppes.

Which brings us to Steven Spielberg, *auteur* of *Close Encounters of the Third Kind,* who taught us the next thing. I remember standing in the parking lot, watching the patrons come out smiling ecstatically. You'll recall that in the last five or ten minutes of that film, we are given closeup after closeup of beatific smiles. François Truffaut smiles. Richard Dreyfus, in the tailored red uniform that was saved for him even though he was a hunted, jobless bum, smiles as he prepares to board the alien mother ship. Moe smiles. Larry and Curly smile. Music up, and everybody smiles. The audience

smiles as it stumbles out into the shopping center, floating through the twilight toward its Thunderbirds and Camaros. Twenty steps, forty, fifty . . . and somewhere between seventy-five and a hundred, the puzzled frown appears. The heels touch the ground.



Mark Hamill

What Eisenstein showed us was that in film the director and the editor can do the bulk of the acting. What Spielberg showed us was that they can't follow the audience very far out of the theater.

Close Encounters was a big film; a big grosser, a media peg, a merchandising tie-in. And every so often, you'd turn on your AM radio, and you'd hear John Williams' music incorporated into a pop track . . . boop boop beep boop, and you'd grin.

Meanwhile, at the Effingham truck plaza, and in the Western Avenue four o'clock joint where Arab numbers-runners throw stools through the backbar, dangerous men would stuff the jukebox for John Williams's *Star Wars* march, and sit with their hands white-knuckled around their beers, hunching their shoulders and thinking the ineffable. *Star Wars* is only incidentally a big film. *Star Wars* is what drove "Take Me Home, Country Roads," down off the charts in the shitkicker saloons along Business 30 in Fort Wayne, Indiana.

In *The Empire Strikes Back,* the same music plays. In the Lion's Den at Columbia University, at the Plough and Stars in Cambridge MA, and in The Hut across the street from Northwestern, they listen again. But the truckers, are out on the road with their illegal eight-tracks of Johnny Carson doing the Don Rickles roast at the Friar's Club. 10-4, Lucasfilm, ol' Buddy.

To continue to explain this, let's review the *Empire* scenario. (The assumption is that by now you've surely seen the film, or don't care; if for some reason you wouldn't like to read a summary, skip ahead to the next section, where you will find enigmatic hints and cryptic allusions, but no dead giveaways.)

As the film opens, the rebels have fled their *Star Wars* base and established a new one on the ice planet Hoth, which was shot on a glacier in Norway. Darth Vader, directing an Imperial search fleet, has just located the new base and is moving in to destroy it and capture Luke Skywalker, played by Mark Hamill, who is unequivocally the principal rôle in this film.

Skywalker, riding his Tauntaun beast over the snow, is struck down by a predator and hung by his heels from the roof of the creature's meat-locker, his fallen light-saber out of reach. With an exercise of the little bit of paranormal Force power he acquired in *Star Wars,* he retrieves the saber and cuts himself free in the nick of time, stumbles out into the freezing night, and is rescued by Han Solo as the Empire launches its attack. During this segment, Obi-Wan Kenobi has appeared to Skywalker in a nice optical print and instructed him to go forthwith for further Jedi training to the master

Yoda on the planet Dagobah.

Robot medicos at the rebel base heal Luke. Solo and Chewbacca try to get the malfunctioning *Millennium Falcon* operational while Princess Leia and the rebel leader try to get the base evacuated while the ground troops and a tactical air force joined by Luke try to stave off the attack of the Empire's walking camelephant tanks while Solo and Leia try to work out whether they're attracted to each other while C-3PO dithers like a screamer and R2-D2 scurries around while the ceilings tremble.

The energy tusk-weapons of the walking tanks recoil like Bofors antiaircraft cannon as they pound the rebels' main power generator—the only above-ground installation at the base. The tactical fighters snare some tanks with their harpoon lines (*harpoon* lines?), but the attack succeeds. Darth Vader strangles an indecisive Imperial admiral. The base transport ships and X-wing interceptors get away. Luke and R2-D2 head for Dagobah in his X-wing. Leia and the other principal characters get away into an asteroid belt when the *Falcon*'s hyperdrive fails to switch in, and hide from searching tie-fighters inside a particularly large asteroid where they attempt a self-refit. Hoth is abandoned.

The refit fails for lack of time. To conclude the asteroid sequence, which from start to finish is by far the most well-done segment of the film, Solo successfully hides again from the searching fleet, and then scurries away, still on sublight drive, to the floating sky-city of Lando Calrissian, an old companion who Solo hopes will give them shelter and new hyperdrive parts. He is not aware he's being followed by a bounty hunter, who is the most promising new character in the film.

Meanwhile, having gotten to Dagobah, Luke is found by Yoda, a superbly executed Muppet, who is at first sure Luke lacks the makings of a Jedi. But, persuaded by Kenobi, who again appears in matte and voice-over, Yoda slowly but surely begins bringing Luke around.

However, Luke attains only the beginnings of mechanical proficiency at material use of the Force. His spiritual mastery is effectively nil—a very dangerous condition because the Force, while omnipresent and omnipotent, is neutral. This is the point at which a previous novice rebelled and became Darth Vader, perverting his knowledge through lack of spiritual serenity.

This is also the point at which Luke becomes aware that Leia, Solo, Chewbacca, and C-3PO are in serious trouble at Calrissian's city. He breaks training, and he and R2-D2 go to their aid over

Harrison Ford

Kenobi's and Yoda's desperate objections. Those objections are couched in half-articulate references to the fate of Luke's father, but Luke refuses to listen.

In parallel sequences, Darth Vader strangles another officer—so much for career opportunities in the Imperial space fleet—and holds a hologrammatic meeting with the Emperior, who is—we are told in the press releases, but not in the film—an evil sorcerer. He deploys such puissance that even Vader speaks to him with great respect. The object of their discussion is Skywalker. The Emperor wants him dead at any cost. Vader offers to attempt to suborn Luke instead. Only if he cannot turn Skywalker to the Imperial cause will he kill him. The Emperor agrees; there is some impression that Vader has placed himself in jeopardy if something decisive doesn't happen via-a-vis Skywalker immediately.

Skywalker arrives at Calrissian's city, where he is trapped by Vader while most of his friends escape. There is a long dueling sequence in which Luke holds his own for a while, then is seriously wounded, is allowed (?) to escape in a desperate fall down the city's

central airwell, is rescued by the *Falcon* at the last moment, and is last seen having a bionic arm installed by robot medicos with the rebel escape fleet to which the *Falcon* has brought him. But Solo, frozen solid, is being taken off somewhere by the bounty hunter as the film ends, and Calrissian has joined the *Falcon*'s crew.

So much for the synopsis. *Empire* follows *Star Wars* as one of the middle episodes in a projected series of nine. (If Lucasfilm keeps to its every-three-years schedule, the final episode will premiere in the year 2001, a coincidence (?).) It is, as so many have said, a much more open-ended story than *Star Wars,* and this is cited as the reason why so many people enjoy the individual pieces of the film but find their euphoria bubbling away very swiftly.

I rather think there's a more satisfactory explanation, and it's to be found in the Spielberg Variation.

What's wrong with the accepted explanation? This: It's no use pretending anyone ever sees a heavily financed film with a virgin mind. Eavesdropping on the line waiting to get into the very first public screening, it was clear that the advance PR had done its work. No one expected a resolved story. Everyone was in exactly the mood of little kids waiting to see the next installment of a Flash Gordon serial. No one could experience a shock of anticlimax at the end.

What's the Spielberg Variation? In such films as *Potemkin* and *Ivan the Terrible*—in all the great Eisensteinian epics—there is a tie to known history; that is, there's a narrative, upon which the kaleidoscopic techniques of creative cinema are adornments. *Close Encounters,* on the other hand, was made by shooting or printing a great many intriguing scenes based on a loose general notion—What would happen to ordinary people subjected to alien technologies? The resulting pile of cinematic objects was then sorted-through, arranged and re-arranged until a pattern evolved and could be called a story.

The media hype for *Close Encounters* made sure that fact was known. As if to underscore it, for the recent re-release version Spielberg went back into the primal trove and emerged with a somewhat different arrangement. Either he simply wanted to be seen being able to do it, or he had become aware that many people were put off by the obvious logical holes in the "story." Perhaps both considerations acted upon him.

But I think there's little doubt that what Spielberg would have wanted to react to solely, what impelled him in the first place, was

his desire to be seen creating. Eisenstein told a little inside joke to another insider, and would never have dreamed of screening it to a general audience. The Spielberg Variation is not, strictly speaking, a variation on Eisenstein. It's a variation on the general trend in all the popular arts toward teaching the audiences to talk shop. To *explain* the joke out of school, and yet demand the same laugh one would have gotten if one had simply gone ahead and told the story.

How does this apply to *Empire?*

Let's first look at the Hoth sequence. Is there any organic reason to shoot it in Norway, on a glacier, seriously discomfiting the actors and, more important, pouring extra hundreds of thousands of dollars into the need to overcome the resulting production difficulties?

There is no such reason. The *story* development is exactly the same as if the Empire had discovered the original rebel base on the lush planet from which the X-wings destroyed the Death Star in *Star Wars*. Why was the base moved to Hoth, if all the story required was a sequence in which the rebels were forced to disperse their forces and the principal characters were scattered to their varied subplots?

The only motive is visible cinematic creativity. Why not use the old sets and some of the leftover old footage? Who would have minded? In fact, who would not have expected it, in the interests of closer continuity? What's the difference between Luke Skywalker struck down by an ice beast and Luke Skywalker struck down by a six-legged tiger? What's the difference between needing to be rescued from hypothermia and being rescued from heatstroke, if all you need that particular sub-sequence for is to establish the existence of superb robot doctors?

No—Hoth is a flourish; an expensive, anfractuous flourish; a piece of *filming,* for filming's sake. It's not as if the *Star Wars* audience had ever seen much of the jungle planet, which had plenty of unexhausted picturesqueness left in it, or as if the Hoth-base interiors are substantially different, except for the Styrofoam "snow" corridor walls, which make no sense.

Let's look at the Tauntauns. Do not look too sharp. They exist only to provide material for the advance publicity stills and the advertising poster, once we realize that they simple occupy the space that would otherwise have been occupied by some other funny animal. In the film, they are made of closeups of heads and partial bodies, and "long" shots of stop-motion models animated in the Ray

Harryhausen manner, then matted in. (As a matter of fact, they move much more like the dinosaurs in Mighty Joe Young's jungle than they do like anything on a glacier.) They are a prominent failure as moving parts of a story, just as so many other special effects in *Empire* call attention to themselves.

Carrie Fisher

I can understand Ray Harryhausen, with, for instance, his Eohippus in *Valley of Gwangi,* being too caught up in a life of impressing other stop-motion animators. It takes a broader view to realize that audiences make a distinction between the movements of life and the movements of superb stop-motion. But there is only one reason why a man of George Lucas's breadth would show the audience the Tauntauns of *Empire,* and that is to give them an unmistakable sign that special effects in fact are being lavished upon them. It is a special case of the general Hoth case.

Nothing like this was done in *Star Wars,* all of whose effects existed purely to lend verisimilitude to the headlong progress of the story. The George Lucas of *Star Wars* would never have used a prologue crawl explaining that the rebel base has been moved for the sole purpose of being a different-looking rebel base.

While I'm not sure that this early moment is the moment at which the general audience realizes that *Empire* has a different essential character from *Star Wars*—I was seventy-five steps down the road, conning my *Millennium Bobcat* through the hurtling asteroids of Dempster Street when it occurred to me—it is the moment that looms largest in conscious hindsight. And certainly something had happened at once on the subconscious level, for from Hoth on I was looking at every segment first as a piece of set decoration and only second as a locale.

This in itself is sufficient to be fatal to the *Star Wars* effect, which depends on a subtle factor that had escaped all the *Star Wars* imitators.

Let's go back to *Close Encounters* once more, to see how that factor works . . . or, rather, plainly failed to work as it had worked in *Star Wars.*

What would happen to ordinary people subjected to alien technologies? That's an intellectual proposition. No one's ever seen it happen, except in weak analogy. True, the Amerinds, for instance, were devastated by the repeating rifle. But a captured repeating rifle operated just as reliably in the hands of an Amerind. The aliens in *Close Encounters* can suspend time, annihilate space, and cloud men's minds. They can remote-operate battery toys, open doors, unscrew things, and dump a bunch of Grumman Avengers in Baja California. So the actors in *Close Encounters* are seen in the grip of arbitrary forces, and each separate incident becomes a proposition in a debate between Spielberg's creativity and the analytical powers of the audience.

Here is an Indiana power company lineman tailgated by a flying saucer. Is he reacting realistically? Is that what I would look like and do if I were he? Here is a housewife in a home which has run amok. Are her reactions credible? How does this alien capability square with the one previously shown? Why weren't all the parts on the Grumman Avengers unscrewed? What can we learn from the fact that their starter batteries were functional? Here is a working class suburbanite husband building a replica of the Devil's Tower in his living room; no lights are flashing, and the ceilings don't tremble. What sort of influence is at work on him? Is he rational in some underlying sense, and if so, what?

Close Encounters perceived as a story is a cool, intellectual structure; underneath it all, we don't participate—we examine, and even though the ghost of Eisenstein is called in at the end to give us the illusion of participation, we have spent too much time examining; once out of the theater, we begin to examine again.

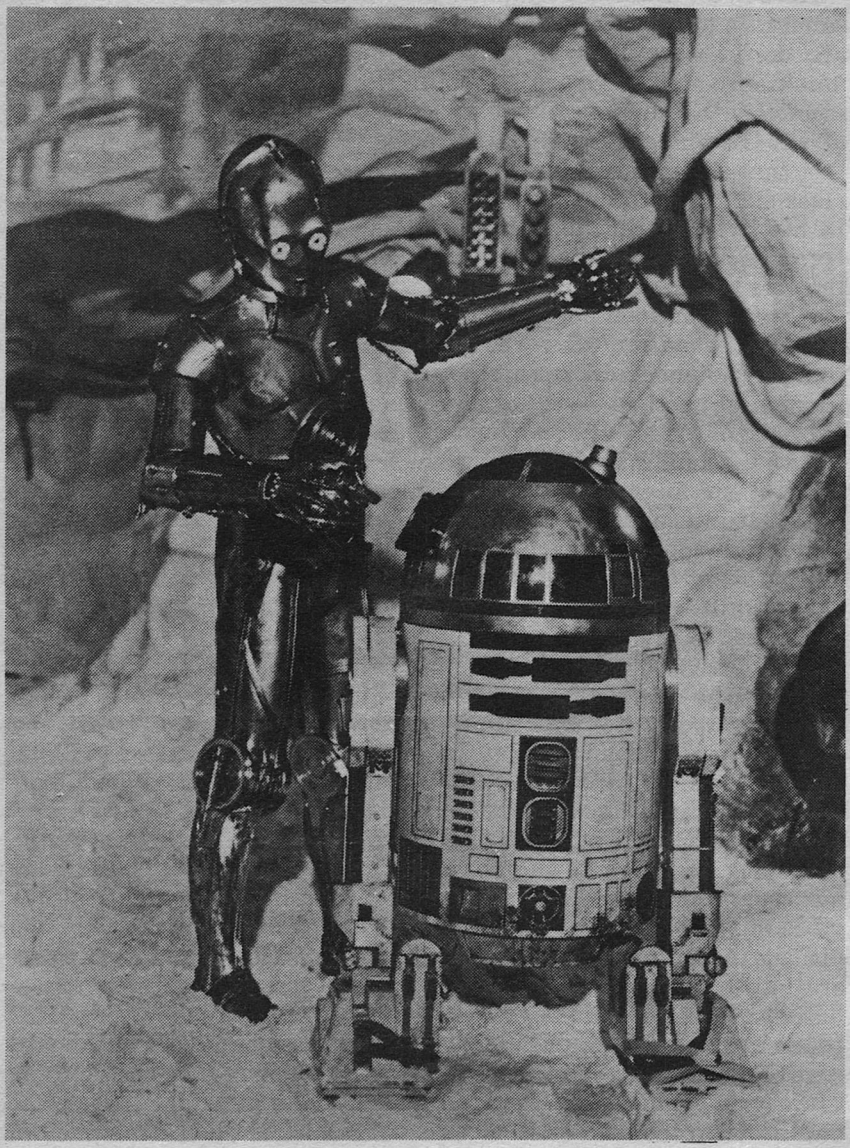
Can it be, for instance, that we have looked at the story all wrong? That in the final scene, the aliens are simply giving back the bait and that in exchange for a bunch of aviators, plus Ambrose Bierce and a kidnapped big-eyed muffin of a child actor, they now have a tag on every alien-sensitive Terrestrial? Will the beatific smiles of the ritually clad victims vanish in dismay after the mother ship closes her wide white jaws?

The new version of course proffers an answer to that. But it's too late; it's the established version which is not only a debate, but an inconclusive debate—as distinguished from an *interrupted* story line cut off clean with an explicit promise of more information to come.

Star Wars, by contrast to *Close Encounters,* is a story about ordinary people doing ordinary things in an ideal way.

You think not? Where, in *Star Wars,* does anyone react to the technological marvels as marvels? The whole effect of the famous bar-room sequence, usually dismissed as an inexplicably attractive piece of nostalgia, is to underscore this feature irrevocably. It has already been indicated a score of times by such details as the decoration of the "simple farm" on which Luke grew up and the manure-hauler grubbiness of his gravsled, an exact analogue of every 1972 International Harvester half-ton pickup that ever plied a washboard road. The actors are never discomfited by their sets or their props. They're at home. What makes them yearn is greed, or love; what makes them flee is menace. To us it's lasers, to them it's bows and arrows.

The movie is a simple, basic story told in the medium of frames.



C-3PO (Anthony Daniels) and R2-D2 (Kenny Baker)

The actors are larger than life only because they ruminate far less than we would. They love at once and fear at once, and then dash to the next panel, yesterday's reaction wiped out by today's. The settings and the plot propel them. They move on tracks, miming, and the sole purpose of the dialogue is to furnish keys: "Get him!" "Look out!" "Shoot!" "Duck!"

There is no question of whether these people are reacting in a rational or realistic manner. Of course they are! Who on the screen stops to gape in awe at the *nature* of the latest marvel—as distinguished from the obvious dramatic potential of its size, speed, or luxury? And there's no question but that the people in *Star Wars* are acting as we would hope to act, overcoming our perils, accepting for us the fruits of that perseverance, courage, and nobility which we have always nurtured within ourselves.

There is no debate. Lucasfilm is with us, and we with it. What is Han Solo but an independent hauler, taking his Kenworth Conventional eighteen-wheeler from job to job, trying to get one more run from Yuba City to San Pedro out of the aging Bandag recaps on his trailer tires?

And that, of course, is what's first undermined and then eventually destroyed by the Hoth sequence in *Empire*.

In *Star Wars,* we noticed slight infelicities in the special effects from time to time. We're sophisticated movie-goers, and we know what blue flickering edges mean. But we understand that even though there are things that SFX cannot yet do imperceptibly, Lucas had no choice; the story demanded a space battle, and he gave it to us, even though there was no way to actually put a full-sized Death Star into actual space and attack it with real X-wings. We knew that if he could have, he would have; the failure is not his, it's NASA's, it's our own, and we and he are one. It's O.K., George; put the pedal to the metal and keep your Fuzzbuster hummin'.

Nobody else understood that. *Alien* asked the intellectual question What would happen if an inexplicable monster attacked ordinary people? It came as close as it could to being a genuine film experience, but close wasn't good enough. *Star Trek* thought there was something to be gained in "updating" the *Enterprise* and aging Kirk, as if he had ever been a real person subject to real chronology. *Black Hole* takes the schizoid position that a movie can be made around an invisible physical phenomenon, redeemable by making it visible with special effects that are spurious in that there can never be an actual analogue to the effect. The movie isn't about a black hole;

it's about an optical printer.

In *Empire,* there is only one explanation for the scene painting which we are shown in place of Lando Calrissian's "real" city. It's a deliberate homage to the equally convincing flats of Ming's imperial city. In fact, there is something very Mongo-lian about the second shot in that sequence, as Lando and his retinue step forward, cloaked and booted, to welcome the landed *Falcon.* Booted and *cloaked?* Has Lando's heating plant gone on the fritz? Or is Buster Crabbe his tailor?

Someone strange assuredly is. Here we are in a galaxy long ago and far, far away. The script makes no reference whatever to Lando's color, which is as it should be, considering that more than half the principal characters in this series are off-handedly a great deal more "unusual" than that. Why, then, does Billy Dee Williams play Calrissian like Superfly? Is this an homage to blaxploitation films? Who in the world decided on that haircut? Is there a Lenox Avenue among the brushstroke boulevards?

With this move, *Empire* goes beyond calling attention to mere production extravagances. It's Lucas's money, after all, and he can throw it around if he wants to, though it's gauche of him to remind us that he's risen beyond our means. But now we're seeing a character react not to internals but to something completely outside the story format. This—not the bar-room sequence—is the first intrusion of what we might call "filmism"; the treatment of an element for reasons that are inside the industry, and thus outside the *Star Wars* universe. Our elbows are being jogged again . . . see? This isn't for you. It's for me.

And then we go to something that's for none of us.

Magnificent a Muppet as Yoda is—although despite Dolby and lots of speakers, I had a difficult time following some of his lines—his and Kenobi's entire interaction with Mark Hamill could readily have been replaced by leased footage of David Carradine being addressed as "grasshopper" in *Kung Fu.* The Force is this, and the Force is that, and you are but a child, my son; you have great promise, but every move you make is wrong. Ha ha, try again, little acolyte!

The media hype tells us that *Empire* "deepens" its characters. Bullshit. Darth Vader is an expressionless composite of Prowse's body, the costumer's art, and Jones's voice—Jones's filtered, overlaid voice. He is a thespian robot straight out of Walter M. Miller, Jr.'s, "The Darfsteller." He can be made more or less portentious, more or less sententious, and nothing more.

But the same thing is even more true of Luke Skywalker.

The media hype brags—brags—that Hamill's shots in his scenes with Yoda were made by having him look at a plastic bucket, Muppet to be printed and edited-in later. Much the same was done in his scenes with Vader. In the closeups, it's palpably obvious that Hamill is seeing nothing but the studio wall. In the two-shots, Prowse spoke dummy lines; lines so dummy that Prowse confesses he had no idea what the scenes were about until he saw the release print. Jones of course was dubbed in later.

Richard Dreyfus might have failed such a test of his talents. The young Laurence Olivier might have passed it. But Mark Hamill is unfairly put-upon. It's like asking Ronald Macdonald to register a reaction to *coq au vin*. He was hired to be a comic-book character. He knows how to register frustration; you roll your eyes. He knows resolve; that's sucking your lips. He knows ecstasy; that's rolling your eyes. He knows conviction; that's sucking your lips.

As usual, Hollywood has mistaken incomprehensibility for profundity. (And we were hoping Lucasfilm would always be distinct from Hollywood.) It thinks we wanted something "better" than "mere" comic-book characterization . . . long dialogue sequences barely interrupted by moments of light-saber dueling; pitchings-in of Freud *manque;* symbolic wounding. . . . Talk. Lucasfilm expects us to want a Luke Skywalker who *talks!* And not having one, it thinks it can dub and edit one into existence.

The Empire Strikes Back is a film which proposes that underlying even the most spontaneous action is a compulsion, that under every moral precept is a neurosis, and that the stage to which we progress after youth is an ambiguous morass of half-understood rules which are nevertheless so omnipotent that we, in our ignorance, stand almost no chance of ever being one of the lucky few On Top . . . where the sorcerers reap Imperial power. Thus, even in the aspect of story, as with all other aspects, *Empire* is like *Close Encounters;* a filmic statement to be examined; an intellectual premise which, like *Close Encounters,* for all its budget and all its technical glory ran a distant second to *Star Wars* in power.

We can leave unsaid the things that might be said to George Lucas at this juncture. For one thing, there's courtesy toward a sincere artist who has fairly won the resources to make this film, and who furthermore pledged every minim of those resources to make *Empire.* For a second thing, there is nevertheless enough excellence here to make the bargain between producer and ticket-

buyer stand up very well. But for a third, there is one hopeful possibility, before we dismiss the other seven Star Wars films as just another degenerating template series like the James Bond series, or espouse the conclusion that even when Hollywood makes an effective SF film, it's in a sense proving that it can't make effective SF films.

It's *possible* that the sequels will lead us through the morass and show us the way to true maturity; isolate the rare essence of the Force, speak to us in direct analogues of the differences between increasing machistic scope and true adult maturity, with all its risks and all the capabilities which are incomprehensible to children.

I wonder how large the audience for that story might be; perhaps Lucas has timed his schedule so that it can ride up through the years as the *Star Wars* audience ages. But I'm not at all sure Lucas was talking to chronological youth, three years ago. Many of us were old enough on the outside to be licensed by the Interstate Commerce Commission.

Let's suppose, though, that the audience stays sufficiently large to support the production capital required to complete the series. Can this central theme be sustained by increasingly sophisticated overdubbings of the Mark Hamill matrix? How soon will it be before it becomes glaringly crucial that Carrie Fisher can't act either, and that Harrison Ford in any given scene appears to be concentrating on his lines for the next? If these characters are going to persist for any length of time within the series, they are going to require so much more mechanical processing than they're already getting that the only thing that will save Lucas's project will be the invention, sometime very soon, of full computer simulation.

But that may not be the crucial thing. They brought in Leigh Brackett to write this one, which means they brought in the best adaptor in the business. But her collaborator, Lawrence Kasdan, is no William Faulkner, and director Irvin Kershner is no John Huston nor any species of Howard Hawks.

Leigh needed sharp minds and decisive talents to push against; it brought out the best in her. She is not specially well-served in her last effort. Which is to say that while Lucas was sapient enough to bring her in, he was also the person responsible for Kasdan and Kershner, and the proprietor who made a fetish of letting others manage the store in *Empire*.

There are slight hints of something in the works. The bounty hunter. Luke's cool new hand, which may mean he will eventually become C-3PO, if not Darth Vader. (It is possible, of course, that

David Prowse and Mark Hamill

Lucas plans to eventually place the entire cast behind masks, in which case all bets are off.) Most important, there is the moment when Luke goes storming off Dagobah with R2-D2 to recue the *Falcon* crew from Calrissian's city.

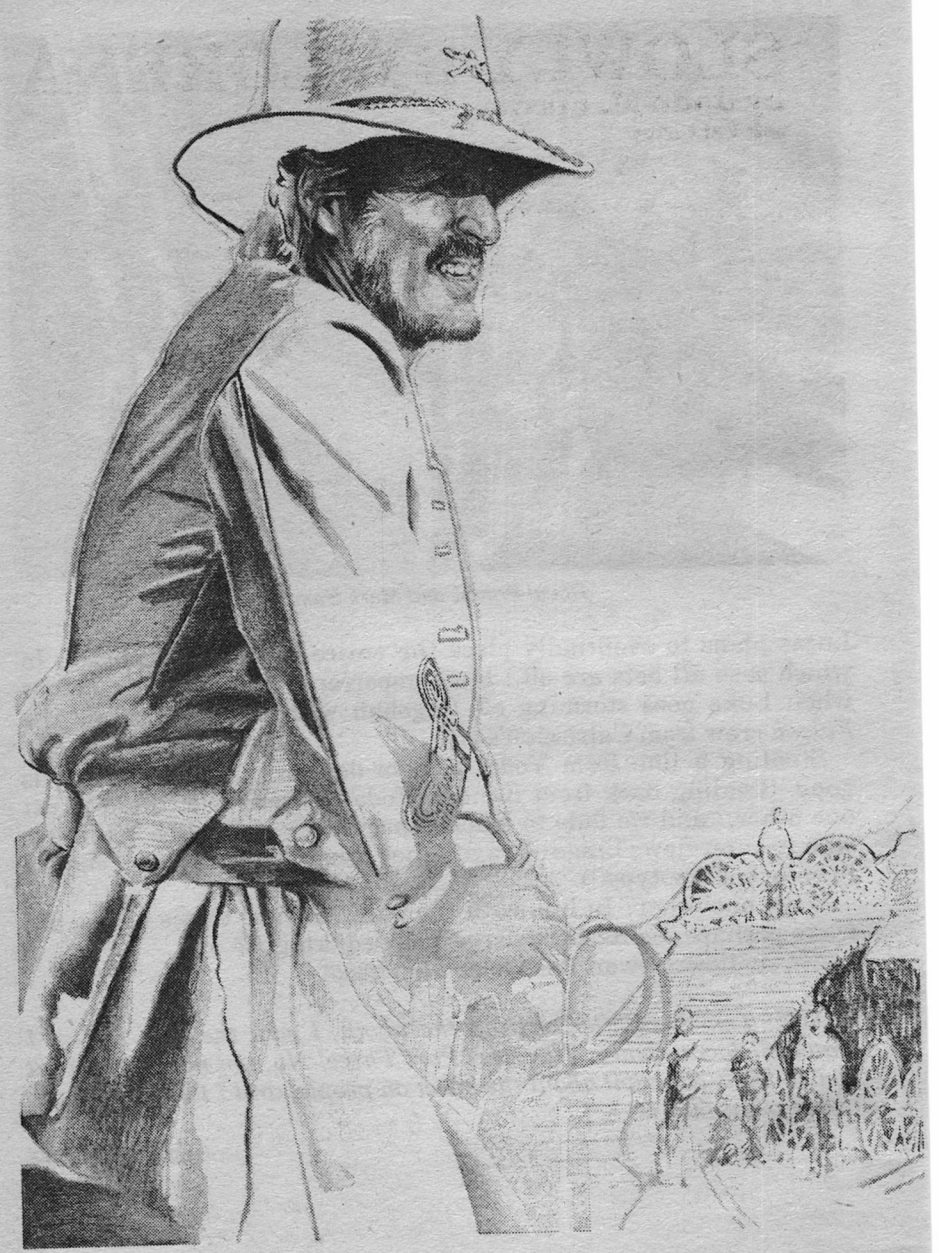
Stealing a line from Yoda, Kenobi despairs; their last hope is gone. Stealing back from Kenobi, Yoda mutters "No, there is yet one other," and we fade to black—specifically, Billy Dee Williams, who in interviews brags—brags—that this role offers him a chance to escape stereotype(!).

What one other? In line with the parenthetical thesis above, are we to perhaps see R2-D2 emerge as a Jedi knight?

Ah, so, lawnmower! Boop boop *beep* boop!

NOTE: Ten days after writing the above, I saw the film again. I watched the audience. Yes, start Part Three! No, I'm not wrong that something's different about the effect on people, and I think I'm right about what that is.

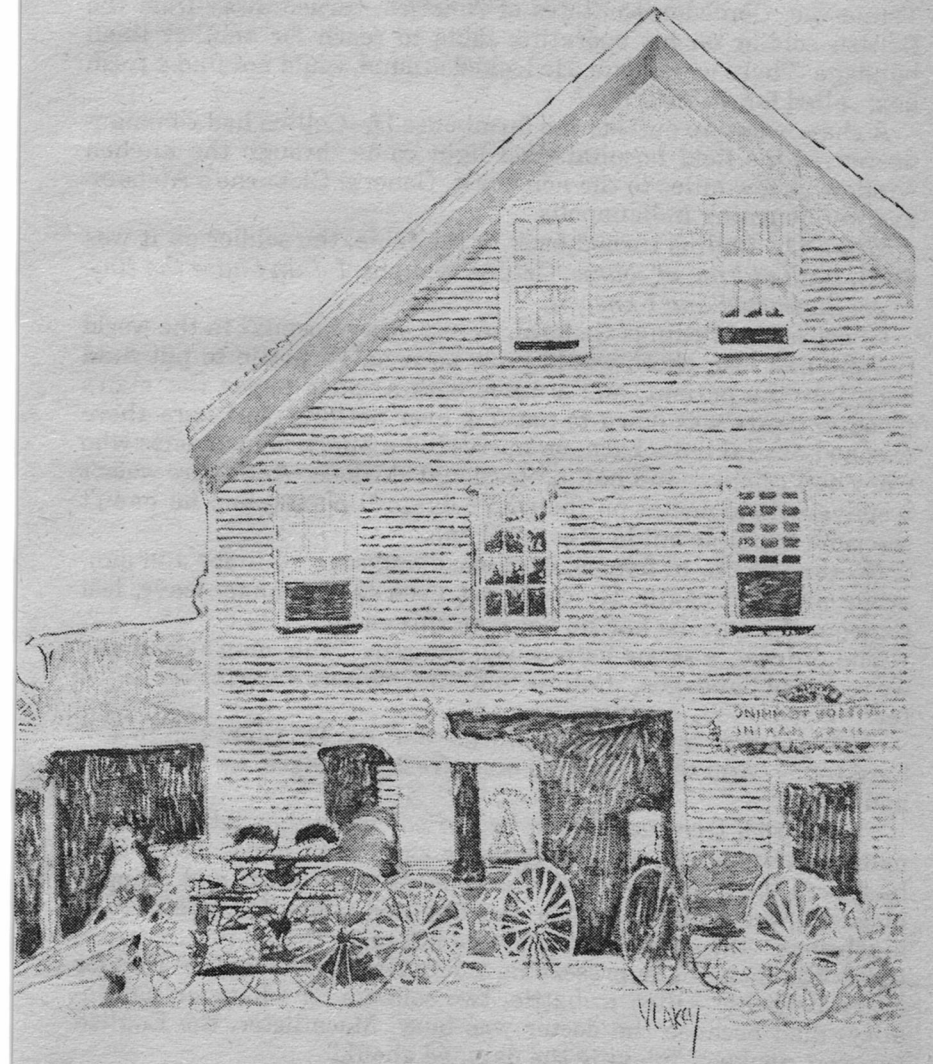
—Algis Budrys



SLOWLY BY, LORENA

by John M. Ford

art: Val Lakey



Realistic vacations are a bit too realistic when you can't get back. And then when you can—should you?

Doctor Christopher Collins, Brigade Surgeon with the Army of Tennessee, Confederate States of America, turned away from the British soldier on his operating table to reach for another linen bandage. There were none. He looked around, could not find a fresh box; called for an orderly.

A cheer went up outside the farmhouse Dr. Collins had commandeered as his field hospital. Red light came through the kitchen window. A few miles to the northeast, General Cleburne's Alabamans were burning Indianapolis.

When Dr. Collins turned back to the table, the soldier on it was dead. *I killed him, of course,* Collins thought. *I didn't have the time to get distracted and I knew it.*

Of course, at Billings General, or any other hospital in the world Collins had lost, there would have been an IV bottle to put fluid back into the patient, and a nurse with a sphyg to say the man's blood pressure was down to nothing over nothing. But here there was no hospital but a barn, no nurses but a bunch of male ones who were half cripples and half professional shirkers. And there wasn't a sphygmomanometer on the whole damned planet, and he hadn't the time to puzzle out how to build one.

No time at all, in five years of blood and severed limbs and gangrene and foul death. He could not even take a home leave, lest someone discover he had no home on this earth.

The orderly, a straw-haired boy, came in. "This man's dead and we're out of bandages," Collins told him. "Where's Doctor Macallister?"

"He's got four more waitin', Doctor Collins. Th' Eightieth took it hard today. And there ain't no more fresh bandages, we run out an hour ago."

The British troops could not be buried where they fell, or in the mass battlefield graves. The military agreement under which they had been supplied required that they be embalmed and shipped home. It was understandable and fine and noble, but it ate up so much *time*—the corpses could not be left more than a few hours, or there was no point in preserving them. And it was figured that for every Britisher killed in battle, two soldiers (of whatever nationality) died because the doctor was busy. Macallister, the English surgeon, spoke of "playing the damned ghoul."

But it was a good agreement. Without European aid the Confederacy would almost certainly have fallen long ago.

Collins shook his head. He was out of sighs, protests, and now bandages. "How many bad ones waiting?"

"No more'n five, Doctor. The brigade got off real lucky. One of 'em's a colonel, keeps callin' for you by name. He wouldn't let Doctor Lewis touch him."

"What's his name?"

"Colonel Farrow, sir."

"I never heard of him."

"He says he knew you before the war."

"Before the . . . he must be mistaken. What's his regiment?"

"He says he lost it. Doctor Collins, if you don't want to see him, we got a fair bit of chloroform left, an' I could . . ." There was a terrible sincerity in the orderly's look. Army doctors very often had unsavory pasts. Collins, having no past at all, was doubly secretive. And yet this boy of—sixteen? The face was familiar, but Collins could not name him . . . no more than seventeen, surely—was willing to conspire for him. *I must,* thought Collins, *be doing something right*—but there was only bitterness in the thought.

"No," he said finally, "I'll see him. Is he badly hurt?"

"Pretty bad. Shell tore up his legs."

Dr. Collins nodded without comment. That was indeed bad. Much worse and the chaplain would be more help. "Bring him on in then . . . Joey," he said, finally putting a name to the face. And an age: fifteen.

"All right, sir. What about Private Brown?"

"Who?"

"The British feller." Joey pointed to the table.

So death got a name too. "I—tell you what. You put him with the others waiting for Dr. Macallister. If anybody asks questions, tell them I ordered you to do it. If Macallister sees you, tell him I'll be over to help as soon as I can."

"Yes, sir. Is that true? The coming over part?"

"Mostly."

"Yes, sir."

They went outside together. The light was getting bad, and the air was heavy with smoke and sickness. Forty or fifty men, today's wounded and yesterday's and some from farther back, sat or lay on cots. Most were quiet; a few moaned, none unbearably. (Though what was bearable now had not been five years ago.) One man sat upright and with his left hand stroked the empty air where his right

arm had been.

"Here's Doctor Collins, Colonel," Joey said. He fetched a candle and held it near.

Collins saw a man with a dirty, sweaty face; curly black hair and an aristocratic beard, rather matted now; dark eyes that shone very white.

His legs were a mess. His coat, its gold frogging and trim looking surprisingly new for the seventh year of the war, was bloodstained but did not appear torn; Dr. Collins put out a hand to open it, and cold fingers locked round his wrist, pulled him down.

The man's voice was soft, uneven, but not feeble. "Doctor Collins?"

"That's right."

"Dr. Christopher Collins, Billings General Hospital, Montana?"

Collins stiffened. "How do you know that?" he whispered, though there was only one way on earth—or earths—the man could know.

"Zach Farrow, Dr. Collins. Alternities Corporation Service Three. I'm here to take you to your Homeline." He shifted, blinked. "Though things have gotten pretty badly botched."

"Damn it, man, it's been five years! What happened?"

"A lot. We call it . . . the Fracture. Broke the whole system apart . . . lines . . . straws 'n a gale.

" 'Scuse me, Doctor . . . my legs . . ."

Collins swore at himself. But he thought: he could not help it. Five years was so long and yet so little time.

Five years ago there had been a helicopter. *(Remember helicopters, Chris? Wonder if there are any Wright Brothers being born about now?)* The 'copter swung round a white-capped mountain, flew close to a high waterfall, and deposited Collins at the Ouray Center of the Alternities Corporation, dealers in exotic—and realistic, they insisted—vacations.

Galton, the thoracic man at Billings, had gone down to Ouray for a weekend. He'd come back with a Caribbean tan, another inch on his biceps, and a beard that was quite out of place on a modern aseptic surgeon.

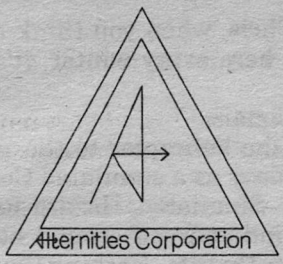
"I tell ya, Chris, it was the whole Morgan the Pirate bit—ships and cutlasses and red-hot shot; doubloons, and oh, ho, the Spanish ladies."

"Why didn't you get a gold ring in your ear?"

"Well, I did . . . but it wasn't the pierced kind, you know."

"But swords? And sinking ships?"

"The swords sorta roll up, or something—I don't really know how they do it, but they sure feel solid. And everybody wears a float ring



from ADVISORY STAFF MANUAL (8-MAN)

§14 Hazard Level Index

§14.3 Limits of Company liability

§14.31 Hazard Level One Company is liable for injuries sustained by Patrons to the limits of liability for a voluntarily attended entertainment facility.

§14.32 Hazard Level Two As HL1 except that Company is not liable for psychic or stress-induced injuries. Patron must sign affirmation of understanding that HL2 may produce severe stress.

§14.33 Hazard Level Three Company is liable for injuries directly attributable to Company action or negligence (legal). Patron must sign waiver of claim for injuries resulting from Patron action or negligence.

§14.34 Hazard Level Four As HL3 except that Company is not liable for injuries below 70% disablement or death.

§14.35 Hazard Level Five Company is not liable for any injuries whatsoever. Death will be considered noncriminal suicide under the provisions of the Cadogan Act (cf. §14.6); as euthanasic suicide, only if affirmation of condition is appended.

§14.36 Note Despite former law and persistent misapprehension, under the provisions of the Kanter-Norman Personal Liability Act, waivers and affirmations signed in the presence of a licensed psychological consultant are fully binding, including over insurance, dependent, or probate claim.

that's just about idiot-proof. I tell ya, Chris, when you think about how many busted skiers they bring in here every winter, it's safe as the zoo. And lots more fun.

"And there's this discount for professionals—"

So Collins had taken the plane and the helicopter to the magic Colorado mountain, and signed for ten days as a simulated Confederate surgeon in a simulated Civil War. Simulated; Hazard Rating Three; stay clear of muzzle flashes, mind yourself around horses, the briefing had said, and you'll be perfectly safe. Nothing (how did the joke run?) can go wrong. Can go wrong. Go wrong. Go——

He put on a nicely tailored costume, white frock coat and boater hat, gray trousers, ruffled shirt with black string tie. He picked up a medical pannier (after being told that most of its contents were fakes—the opiates especially) and entered a ring corridor twelve meters high and sixty in diameter, with twelve steel doors in its outer wall. High overhead, in a glass gallery they called the Widow's Walk, people in tan coats and ties worked at controls that seemed massively complicated. A door opened for Dr. Collins and a dozen others, then closed and sealed airtight behind them. Some were Union soldiers, some Confederate, some evidently politicians from Washington or Richmond. One was a newspaper correspondent. A fellow who seemed to be a slightly seedy gunslinger was actually a Texan cavalryman.

The transfer from Ouray, Homeline, to the world where Secession would be played was supposed to be comfortable and smooth. There was not supposed to be a lurch like a train derailing, or blackness, or a sense of falling—certainly not falling, everyone feared falling from the moment of birth.

Dr. Collins awoke on his face in dust, in the midst of Civil War; and for a moment he thought the error, whatever it had been, had been merely minor. The moment ended when there came a mighty whistling with a wind behind it, and ten meters ahead of where Collins lay, two human beings were blasted into ragged bloody pieces.

Spherical case shells had done that, he knew now, just as he knew the patterns left by solid shot, and canister, and conoidal Minie bullets; and now that the British were here, the bayonet. The Americans hadn't taken much to the bayonet, this war.

So that as Farrow gripped Collins's hand with a shock-cold one, smiling while he sweated and bled, the doctor looked down and read

the story of the war; of powder exploding and metal flying and skin and bone receiving.

He knew the next turns of the tale. Chloroform, sweet-smelling and heady, poured into a sponge over the face. Then the knife, through the meat in a heartbreaking stroke to the bone. And the grinding swift saw to finish the job.

No more sighs or protests. Because here, now, that was good medicine. In this world and time Lister was only experimenting and Semmelweis was losing his sanity (that is, they might be, if they existed here at all) and if Collins did not cut, there would be septicemia, and gangrene; and after that phase of flesh becoming filth, death would be quiet anticlimax.

If I only had—Collins thought for the hundred-thousandth time—and stared at smiling dying Farrow.

—oh my God.

"Get this man inside," Collins shouted at Joey the orderly, and took the other end of the stretcher himself.

Farrow waited on the kitchen floor, silently, while Dr. Collins and Joey moved Private Brown's body from the table. Collins wrung a rag soaking in sodium hypochlorite and mopped the table, the smell of chlorine driving the odors of powder and burnt flesh from his nose. With any luck the worst of the contamination was also being scrubbed away.

"How are we set for Labarraque's solution, Joey?"

"Barrels of it, Doctor. Th' other doctors say you c'n have the whole army's stock of it, if you want to fool with the smelly stuff." Joey saw Collins' red flash and hastily added, "That's just what they say, sir. I didn't mean no—"

"It's all right." Collins had not been angry with Joey; the boy had only been honest. And in a way, Collins understood. All that scrubbing's fine for nurses and Invalid Corpsmen, but doctors have *work* to do, Collins! Don't you know there's a war on?

No time to keep long-term records (which would probably only burn), no time to do anything remotely like a clinical study, say *antisepsis saves lives;* barely enough time to dig out the wounding metal and cut off the ruined limbs.

But tonight, Collins thought, *it ends.*

They put Farrow on the table; he coughed a bit at the chlorine fumes and was quiet. Collins turned to the dead man, but Joey said, "I'll get him, Doctor; you tend to th' colonel. And I'll hunt up some sheets for bandages." He hauled Brown's body (Collins forgot to laugh) out travois-fashion, the stretcher's rear handles scraping on

the floor.

Dr. Collins wondered suddenly how much of Farrow's speech Joey had overheard, and what he might make of it; anything and nothing, he supposed, and lit the oil lamps above the operating table.

Farrow had passed out—not died, Collins instantly assured himself. He wondered if the Alternities man had had some kind of field medical kit—wouldn't that be something? Analgesics, antiseptics, antibiotics—a bottle of aspirin would be an incredible blessing, some little bit of the medicine Collins had been taught to practice.

Collins got down the chloroform, the funnel and sponge, called an orderly to pour the anesthetic while Collins cut scraps of bloody cloth away.

Farrow started at the touch of the tools. Good, Collins thought, there were some nerves left down there. Farrow's eyes opened wide above the funnel. He groped for the orderly's arm, but his muscles were uncooperative. "Don't," he said through the sponge, "you can't . . . I . . . please . . ."

The orderly, an Invalid Corpsman of twenty-three who stood on one living and one cork foot, did not change expression. He had seen this a thousand times before, and colonels were no different men on the table. But Dr. Collins found himself sweating.

Collins was looking at a case no different from hundreds upon hundreds of others: massive case wounds (Henry Shrapnel was not immortal yet) to both legs, multiple compound fractures, extensive lacerations, decolorization of muscles. Prognosis: terminal without immediate indicated treatment. The knife. The saw. In five and one half minutes it would be done, and the colonel would be on his way to a hospital, from there to . . .

But this man wasn't a colonel and he wasn't going to a hospital—at least, not one of the 1860s. And so, Collins determined, he would not lose his legs.

But could he keep that promise?

In the first months he had tried to mend shattered limbs. It was slow, but not all that difficult. Then he had watched his patients heal, and learned how wrong he had been. He could not forget the swelling, the black rot.

Farrow must surely have guessed this. It was why he pleaded, under the sponge.

Collins dismissed the orderly, which didn't bother the man much either. Possibly he thought the doctor wanted no witnesses to the colonel's operation, just in case. That was just about the truth, after all.

Collins drew on linen gloves that had been soaked in Labarraque's solution, then dried in a closed box. His instruments stood in a pan of the same. He sponged Farrow's wounds with the solution diluted ten to one.

Labarraque's solution was sodium hypochlorite in water; in the strength provided, nearly laundry bleach. But chlorine was merry hell on microbes. And it was what he had.

In forty years, Collins knew, a man named Dakin would discover the ten-to-one dilution; and Dakin's solution would become the medical miracle of the Great War. (Less than forty years after that, somebody would invent numbered global wars.)

Collins, already under suspicion for using the stuff at all, had to water it secretly, or plead shortages. *Still, it just might have been called Collins's solution in this world. But no chance now. I'm going home—*

The tip of the probe in Collins's hand was swinging wildly.

You've got to get us out of here now, Mr. Farrow. Or this world your company put us in will kill you in a very nasty fashion indeed.

He bent to put the broken man together, and completed the thought:

Just like it's killing me.

Four hours later Dr. Collins tucked a blanket over Farrow's splinted legs and left him sleeping peacefully.

Collins walked out of the house, into the camp. He did not feel at all tired; he had been practicing real constructive medicine, and it had restored him.

All around, campfires lifted the night just a little. The northern sky still glowed with the fires of the city. How chivalrous the army had been, once, years ago; convinced that the Northern population, treated properly, would swing its sympathies South.

But it was 1867, and the war was total.

General Sherman had never reached Atlanta—and might never. There was a William T. Sherman in this world's Union Army, Collins knew, but he had no idea where that man was, or even if he was still alive. Not long after Collins's arrival the news filtered down that a Yankee general named Grant had been killed in the Wilderness. But, went the story, he had been a fool and a drunkard, more the Confederacy's loss than the Union's, and no one much noticed or long remembered.

Collins did not know who had started the fires. Stonewall Jackson, who had never quite recovered in mind or body from his Chancel-

lorsville wounds, pointed a shaking finger and spoke of the flaming sword of the Lord.

The men, as always, were singing.

The days go slowly by, Lorena,
The snow is on the grass again . . .

In a month or two there would be snow, and the tempo of the war would slow; so would the dying. Hallelujah. Chills and gangrene, snowball fights between Blue and Gray pickets, frostbite and dysentery, trading coffee and tobacco across the lines of battle. This Christmas everyone would be drinking Scotch whisky and British gin.

At Nashville a Christmas ago, Collins had seen the empty breastworks covered over with deep clean snow. There were not many things that proclaimed war upon the earth as straitly as those slanting timbered gashes, yet the snow made them seem somehow innocuous, natural.

Oh what a lovely war, Collins thought with sudden revulsion. Somehow, he realized, the thought of staying here had entered his mind.

He went back inside. *You're going to get me out of here,* he thought at the sleeping Farrow. *I've done everything I can for these people and their world, and now I'm through. Get me out.*

He sat down in a hard parlor chair. *God, please, take me home.* His head tilted forward and he slept.

Joey's hand woke him. "Doctor Collins, the colonel's wakin' up. He's talkin' too, sir, kinda crazy."

Collins was fully awake in an instant, and practically leaped from his chair, thoughts of fever, delirium, septicemia driving him. He had been in too much of a hurry last night: he had not asked Farrow where the worldline gate home was, had not even waited to let Farrow tell him. He had seen the wounds and the shock and behaved like a good surgeon of the Civil War, poured the chloroform and cut—

Would they even let him near a scalpel again, when he got home? He stopped thinking about that.

"Farrow, can you hear me?"

Farrow's head rolled. His eyes were closed. A hand twitched. "You're coming in much stronger now, Ouray," he said. "Damn, it's dark down here. I suppose arclights wouldn't be any help, though."

"Farrow, listen to me. This is Doctor Collins. *Collins*. Do you understand?"

"In and out quick, I copy. How recent is that fix on him? If he's really in a shooting-war line, I don't want to have to run under the guns to find him."

Every doctor has held the hand of a dreaming patient who thinks the doctor is someone else. Whenever it happens, it is frightening. All the more so when one is the topic of conversation as well.

"Okay, we've got Gate threshhold," Farrow went on. His right hand worked some nonexistent instrument. He reeled off letters and numbers.

Joey's shoe squeaked, and Collins swallowed hard. He put a hand behind Farrow's head and raised it slightly, gave him a light slap.

Farrow's eyes snapped open. "Collins—" His pupils rolled down toward his legs. "What did you—"

"The best I could. They're still there. Whether you keep them or not depends a lot on what you do next.

"Joey, would you get me some water? And a little brandy, if there's any left."

Joey nodded and went out.

Collins said "Now. I did all I could to save your legs, but here, now, that isn't much. If we don't get you to a real hospital, and very soon, you're going to lose them. And probably die too. Understand?"

"Yes."

"Good. Now, where's the door out of here?"

"East. Couple of miles—I kept fading out while they were bringing me in; I don't know exactly. It's in a yellow farmhouse—the Pendleton farm."

"How do we get through?"

"Fireplace, living room. Andiron. Hearth swings back, walk through. Sounds like an old movie, right? Alternities is . . . like that. Was, anyway.

"But there's—" Farrow's face pinched. "—a problem."

"What?"

"I told you . . . there'd been an accident. Fracture. Whole system's wrecked. We punch . . . temporary holes . . . get people out. Don't know how long we can keep any hole open."

"They won't hold it for you?"

"Can't. When it closes . . . it's shut."

"Well—don't you have a partner, or something?"

"Yeah . . . I did."

Footsteps sounded in the entry. Collins whispered, "Then—as soon

as I see a chance." Then Joey came in with water and aqua vitae, and Collins treated Farrow as if he were any other patient of rank but no special importance.

Not long after noon casualties began to arrive; light wounds from skirmish fire, not the dismemberments of pitched battle. But Minie bullets still broke bones, lacerated muscle, perforated blood vessels; and the knife and the horrid saw came out. And Dr. Collins cursed them as he had not done in years.

During a rest, he heard Farrow talking about the previous day's action, and his breath stopped. When he entered the parlor, a general—Bedford Forrest, of the piercing blue eyes—was standing by Farrow.

But he was smiling.

Farrow said "And I might say, General, that one of my worries was that 'Farrow is wounded' would become 'Forrest is wounded,' and affect our men's spirits."

"I'll see it doesn't," the general said, and turned his sharp eyes on Collins. "Doctor, the colonel tells me that you saved his legs. I should like to thank you for that. Too many of our medical men are much too free with the saw."

Collins nodded, rather stupidly, he supposed. After Forrest had gone, he looked at Farrow and said "I thought—"

"I'm a Service Three, Doctor," Farrow said. "I've got training for situations like that."

Farrow's eyes closed tightly, and his face showed great pain; and Collins turned away, because he treated the pains of the body.

Collins gave thanks for the light fighting and the early sunset. He changed his white coat for a gray one, put on a slouch hat, slung his medical pannier—the wholly real one—over a shoulder. Then he picked up the front handles of Farrow's stretcher and pulled it away from the farmhouse-hospital and toward an ambulance wagon.

It was only a few dozen meters. But as Collins walked and dragged, his load seemed to increase, the distance to increase, until he was gasping. Farrow, drugged against pain, changed position but made no sound.

When, finally, they reached the wagon, Collins realized he would have to lift Farrow over a meter. And he could not possibly.

Joey was at his elbow with a bullseye lantern. "Do you need help, Doctor?"

"Yes," he said from empty lungs, "please."

They hoisted Farrow into the ambulance. It seemed to Collins

that the stretcher's weight had all evaporated in a moment.

"Thank you, Joey. That's all."

"Somebody's got to drive you, Doctor."

"I'll—" He started to concoct a story, but Joey's look destroyed all his hard-won skill at lying. He just nodded. "Do you know where the Pendleton farm is? East, two miles or so?"

"Yellow . . . house," Farrow whispered.

"I'll find it," Joey said. "Let's go, 'fore somebody sees us."

He can't possibly guess the truth, thought Collins, *but he knows something's wrong. And still . . . and still . . .* He got into the wagon. Joey clucked softly to the horse and they were off with no fuss at all.

An idiot doctrine of the times called for two-wheeled ambulances, claiming they rode more smoothly. It was nonsense to anyone who had ever ridden in one. Collins had seen men pissing blood after a ride in the "bone-shakers," their kidneys bruised. He had managed to get four-wheeled wagons for his surgery . . . and the word had spread.

So he had done some general good, he supposed.

What if he did stay here?

How can I even think that?

It might take more time than Collins had to live, but surely truth would out. What if he kept pushing antisepsis, debridement, dry dressings, analgesia? There hadn't been time to experiment with antibiotic molds, heparin from hagfish—but when the war ended (as it must)—

But was it enough to know the truth? Did time really matter, if you were out of your own? It had not been sufficient that Semmelweis was saving lives: he went still from the hospital to the madhouse. . . .

Nathan Bedford Forrest had called him a fine doctor doing good work, and maybe that was all anybody had a right to expect from any profession.

The wagon halted. "Here's the farm," Joey said. "Don't see nobody around. Reckon if we look like doctors they won't shoot us, huh?"

Collins nearly jumped. "Shoot? Who?"

"Mister Farrow's friends. Where should we leave him?"

"Uh . . . inside the house."

"All right."

Farrow slept. Collins and Joey eased the stretcher out, carried it toward the dark-windowed yellow house. The night seemed unnaturally quiet.

"First off," Joey said, "I couldn't figure out what you was doing, Doctor Collins. Then I guessed you was goin' to give him back."

Collins was silent. He could not see Joey's face, only the house, the door to the door home, getting closer and closer.

"But you don't need to worry none, Doctor Collins—I mean, I wouldn't never tell . . . anyways, I don't think Mister Farrow got t'spy out anything important."

Collins nearly dropped the stretcher.

"Doctor, did I ever tell you I want t'be a doctor?"

"N-no, Joey, I don't believe you ever did."

"Well, I do. And that's why I'm an orderly, and not a drummer or somethin'. And I'm learnin', too. I been watchin' real careful, Doctor Collins, and I can do anything any of the orderlies can do, and I know some things they don't. You know I can say the whole Hippocratical Oath, just like you did at Harvard Medical School?"

Exhaustion seized Collins. "No, Joey . . . I didn't." *Did you know I went to the University of Illinois, and my Harvard diploma is a phony from an amusement park?*

"That's why I didn't say nothin' when he started talkin' about bein' part of Longstreet's corps. 'Magine Ol' Peter havin' a corps command."

Collins laughed a little bit, with Joey: in this world the Confederacy had accepted Longstreet's request for a paymaster's position. Obviously Farrow's training was not perfect.

Whose was?

"But it's all right, Doctor Collins. I understand—you took care of him 'cause he needed it, just like the Oath says.

"An' if you won't take this funny, Doctor—I'm kinda proud of you. Ain't many doctors take the Oath serious as you."

"And you don't even mind that I'm . . . giving him back?"

"Aw—he don't know nothin' gonna hurt anybody. You're just sending him home. Everybody deserves to go home, even Yankee spies."

Collins' heart pounded. How much did he have a right to expect from his profession?

How much could medicine demand from him?

The changes he had tried to make were like finger-pokings at a sleeping dinosaur. Alone he could not succeed. Alone he was doomed.

But suddenly he was not alone. And with an ally—

Collins changed his mind, or perhaps it was his heart.

They went through the front door. Inside, an oil lamp was burning its last; embers glowed in a large stone fireplace with brass andirons.

They put Farrow gently down before the hearth.

"Reckon that does it. Don't guess they'll come for him 'till we're gone."

"You go back to the wagon now, Joey. I'll be right along."

"Well . . . all right."

The door closed behind Joey. Collins went to the fireplace, put his hand on a brass knob. It turned, and the firepit swung back and opened on a black, black space beyond.

Collins pivoted the stretcher, knelt to push it through. He was not sure what would happen to his hands if they entered the black space, decided to use the poker to push the last few inches.

Goodbye, Farrow. It won't be the first time somebody left home to be a doctor—

The thought stuck in his gears. It was just too unbelievably noble for him. He touched the bag on his shoulder, and thought—

In the fifty years between the Civil War (the war of *his* world, the one that was over) and the Great War (first in a series) what had changed?

Weapons? Not really. Rifles and artillery still ruled. The only great difference was in quantity.

Tactics? If anything they deteriorated. Earthworks and barricades. The only difference, size.

It had been said, more than once, that World War One was the product of Europe's refusal to learn from the American War.

But they had learned one lesson. Without the lesson in medicine and sanitation, the trenches could never have been filled. The War of Attrition—the Slaughter of the Innocents—could never have taken place.

Collins saw the Nashville breastworks, unsoothed by snow, laden with men: Americans and British—and why not French? Germans? If Collins worked hard, he might create a power of war that no general ever had.

If you can do no good, at least do no harm.

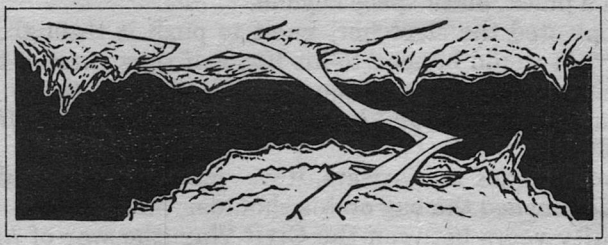
Collins bent his head, pounded his fists on the floor. *You're out of your mind! You just want to go home so badly—*

Yes. He did. And had not honest Joey told him that even traitors and spies deserved that one thing? Heart had not changed, really, nor mind. Collins wanted to go home. He had just been unsure, for a little while, of where home was.

Collins pushed the curtain slightly aside and took a long look at Joey, who stood patting the ambulance horse as if neither of them had any idea there was a war on.

Collins unslung his doctor's bag, placing it very carefully near the door, where Joey would be certain to find it. He wished he had the diploma to leave as well. Then he turned back to Farrow, who had not seen, would never know, any of this.

He said, "Let's go home."



MEETING PLACE

Not in my lifetime, nor that of my sun;
but beyond the final collapse when
the last static ashes and
clinkered proteins bleed
slowly, from the microcracks of the next
cosmic egg—then
and there will spin
the tiny helix, eternally
recurring, lapped by pale
and teeming future seas.

Perhaps we'll meet?
Say yes;
say . . . an eon from now,
beside the gently sloping banks
of the gene pool. Come
as you were,
and I'll bring the wine.

—Ken Duffin

WHAT'S WRONG WITH THIS PICTURE?

by Barry B. Longyear,
John M. Ford,
& George H. Scithers

art: Jack Gaughan

Authors Longyear and Ford put all the blame for thinking up this one on author Scithers, who claims that he's seen too many stories with this setting and wanted to **do** *something about them.*

He was rolled into the hearing room, a drip bottle attached to the back of his wheelchair. The nurse following the attendant pushing the wheelchair carried a portable cardiac unit. The trace on the screen was jagged and irregular, and hanging ominously at its side by insulated coils were the white handles of two large electrodes. As the attendant stopped the chair before the long, polished mahogany table, the seven board members filed into the room from a door behind the table. Each one glanced at the man in the wheelchair, then shook his head before taking his chair at the table. The man in the wheelchair stared with vacant eyes at the wall above and behind the board members. His tongue hung from the left corner of his mouth, and the attendant would lean forward every few moments to wipe the drool from the man's chin. A doctor entered the room, studied the cardiac readings, frowned, then turned and walked to the man seated in the center of the seven at the table. The one seated sadly nodded his head, and the doctor returned to the man in the wheelchair. He removed a case from his pocket, took a syringe from it and inserted the needle into an entry port connected to the drip bottle line. After another moment, the doctor stood and nodded at the man seated at the table, then he walked around the chair and stood next to the nurse.

The man in the wheelchair jerked, then retracted his tongue. His eyes became less vacant, his glance darting about the room until it finally came to rest on the men seated behind the table. He jerked again. The man seated in the center smiled at him and nodded.

This is . . . it. This is it. The hearing, isn't it? Yes, I can see that. I'm not crazy, you know. Very dreadfully nervous, but why do you call me crazy?—a little upset—not crazy. Not at all. I'm still John . . . John . . . Well, you know me! Yes, of course you do. Best one you ever had. Best damned one . . .

You want to know what happened? . . . It's getting clearer. The wig-picker and I, we've been working on it. Working on it a lot! At least we have when this quack here doesn't have me junked up to my eyeballs. A shrink can't work with a piece of meat; I have to be awake. . . . What happened? Give it a moment. It's coming back. Aaaahh! No! This jerk business is just nerves. Anybody would have a case of nerves after what I've been through. Anybody . . .

Well, I remember waking up in that alley. All that garbage, the cans, the cartons. It was dark. Night. Yes, it was night, and I woke up in that alley. My head was fuzzy, but my mind was . . . blank. How I got to the alley, who I was . . . all of it was gone! That would

upset anyone, wouldn't it? No, don't give me any more of that knock-out juice. I'm all right.

All right. I was in the alley waking up. My mouth tasted funny. Maybe drugs or something else. Someone had dumped me in that alley, and that same someone must have slipped something into me, I guess.

I stood up and weaved about, trying to get my bearings, in the fog and the maze of rickety wooden buildings. My chest felt like the drummer for Steppenwolf had used it to practice on. More turns, more twists, more fog. I didn't know where I was; this place looked like a waterfront, but I couldn't smell the sea, just a scent like something burning. San Francisco maybe. Where little cable cars climb halfway to the stars, above the blue and windy sea. Or maybe somewhere in Maine. It was tough to say.

And I didn't know who I was. My head felt like Enrico Fermi was running a reactor test inside it. I was wearing a brown trenchcoat. I shoved my hands in my coat pockets, searching for ID of some kind. In the left pocket was a pack of cigarettes, Gauloises, the French ones that smell like grass, and a bit of Normandie butter in foil. I wished I hadn't put my hands in so hard, and licked my thumb. The butter was salted. I was no gourmet, either.

In the right pocket was a gun. I took it out and turned it over in my hand. It was a .25 caliber Colt automatic, nickel-plated. A short, lethal-looking weapon that packs enough punch to mildly annoy anything smaller than a housecat, and is carried mostly by people who'd only hurt themselves with real guns.

In my pants pocket was a portrait gallery of my favorite presidents, signed by great folks like Douglas Dillon and Willie Blumenthal. No credit cards or traveler's checks, though. Karl Malden would have hated me. But at least I had money, cigarettes with butter all over them, and a gun that would make a great cigarette lighter. And I could butter any toast I ran across.

Time to get things moving again.

The street at the far end of the next alley was brightly lit, and I stumbled in that direction. When I reached the end of the alley, a roar deafened my ears, leaving me with a headache that could split granite. I sagged against a wall and watched as a ball of fire with a long tail moved up into the night sky until it was out of sight. I looked down and saw white and blue lights dotting the surface of a landing field of some kind. Too small for a jetport, though: those 747's have to roll forever to make it into the air.

I pushed away from the wall and looked up and down the street.

There was no one in sight except an old man. He was dressed in rags and a hood, and carrying a brown paper package. He stopped in front of me. "Have you seen Leibowitz? I have something for him."

Damned winos. They're everywhere. "Beat it. I don't know any Leibowitz."

The old man nodded. "Bless you, my son. Kyrie Ellison." He wandered off. I looked at the buildings lining the street, dark windows and doorways—eyes and mouths of crumbling monsters from another age. Another roar and I clasped my palms over my ears and looked toward the white and blue lights. Another tailed ball of fire climbed into the night above. As I lowered my hands, I saw a bit of neon lighting adding some color to the otherwise drab scene, cutting through the fog like a flying saucer telling me it wanted to give back some missing pilots. The sign said:

D I S M A L

P O R T B A R

on and off, on and off. When I got closer I saw that it really said **ALDISS MALT**, but a lot of the letters were broken. Some kind of British beer, I figured.

But below it was another broken word. What it said was **SPACEPORT BAR**. What kind of joke was that? The only spaceport around was Cape Kennedy, and the closest thing to a bar there is the Greyhound bus stop restaurant that serves microwaved sandwiches.

My head ached so, I decided to stop trying to figure out the first word and concentrated on the second. Bar. If my head was telling me anything, it was that I needed a drink. I pushed open the door and found myself in a darkened vestibule staring in horror at a tall, hairy thing with lots of teeth. Another customer pushed in behind me and waved at the hairy thing. "Lookie, Wookie."

The hairy thing waved back. "How's the weather, Hal?" it asked.

The man shrugged. "Clement." Then I followed the man past the hairy thing through another door. While my ears were being assaulted by bad punkjazz, what spread before me was . . . well, I don't know what it was. The customer called Hal took a CO_2 extinguisher from the wall, aimed at the globby-looking thing, and gave it a short blast. The glob contracted, clearing enough space to walk by. I looked down at the mass of quivering jelly.

It shrugged and held up two tendrils. "Hey, man; I'm sorry. I just been out of work a long time. Can you spare me a couple of credits?"

I reached into my pockets, found a few bills, and pulled out a fiver—U.S. currency—and held it out.

A tendril whipped out, absorbed the bill, then nodded a glob to my left. "Thanks, buddy. I'll get this back to you as soon as I can get work." It flowed through the door; and I heard the hairy thing call after it, "Good night, and stay away from ice skating rinks."

Beyond an orange, pinch-faced combo that was thumping out horrible music, someone in a red jersey shot to his feet and shouted something at a tableful of uniformed things with heavy eyebrows and pointy ears.

Inside, I hung up my trenchcoat, pushed my way through the customers milling around the entrance, and made my way to the bar. If fists started swinging, I didn't want to be within knuckle distance. I leaned an elbow against the bar and waited for the bartender. Between the noise, the smoke, and my headache, my stomach started doing the flapjack bit. At the far end of the bar, a robot was opening beer cans, flipping each one pull-tab-end down, then deftly puncturing the tabless end. I shook my head; motion caught my eye; I found myself staring at the mirror behind the bar. I saw—I even waved my hand to make sure I was me. My face was bruised, but it was the jacket I was wearing—a loud, loud thing of black and white and red plaid. And a necktie. While I was struggling with this image, a fat man in a bloused coat came up behind me. I turned and met his eye.

He smiled ingratiatingly. "Sir, could I interest you in one of nature's most cuddly, loving creatures—"

"Scram, fatty. I got troubles of my own!"

The fat man shrugged. "Well, if you've already got one I don't suppose you need another." He faded into the haze. I closed my eyes and tried to block out the sounds of the place. The fat man had triggered—almost—a memory. I opened my eyes again to look at the mirror, but between it and me was a huge cat. It twitched its whiskers.

"Order, sir?"

"Borehole Number Three," I said, without thinking, and suddenly I was back under the old Olympica dome again, hearing the thin Martian wind blow red sand against the walls—sand that it had picked up as it swept across the Dead Sea Bottoms. And Marsdust: there was half an inch of it on the dome floor, you couldn't keep it out. And I was drinking Borehole Number Three from a quartz cup, drinking to forget Calkins and Nowlan. They'd been my drill-partners, until Calkins had made one little mistake. All he'd done was

to forget that gravity makes things fall *down*, but Mars doesn't forgive mistakes like that.

And now I, Erik Juan Massif, mercenary of a hundred worlds, was stuck—

On Mars?

The room jiggled like the background of a Godzilla movie. I'd ordered Martian miner's booze from the bartender, and if I couldn't think of a good explanation, I'd be sharing a padded hotel room with Napoleon and the Emperor Caligula.

Come to think of it, I wanted an explanation myself. I looked at the barkeep, but he wasn't looking at me. He was holding a ceramic bottle in tongs, pouring into a quartz cup. The bottle had a big **3** on it.

"Two Deimos in gold, sir."

I fumbled. So go ahead, tell me you wouldn't have. I got out my wad of bills, finally, and pulled off a few dollars.

The cat sorted through the bills, then licked its whiskers. "I keep telling you people: *no dollars*. The banks and I have an agreement: they don't serve drinks and I don't exchange currency. . . ."

Something flitted by and landed on the bar. The cat shook its head, took the bills, and gave me some change. The thing that landed on the bar looked at me with huge, yellow eyes. It raised its left eyebrow and said, "Bad taste." I looked closely at the creature; it was an owl. I swear it was. No, I didn't even know that owls have eyebrows. Do they? They must.

Anyway, it took off, flew across the room, and came to roost on the antlers of the mounted head of a big white deer that hung over a fireplace half-filled with broken glass. I shook my head slowly, turned back to the barkeep, whose eyes got big behind the safety goggles he'd been wearing to pour my drink.

"Oh, I'm sorry, sir. I didn't know you in those clothes." The cat leaned close. "He's in the booth over there, waiting."

I could have said "Who?," but what difference would it have made? I picked up the drink and went to the booth.

"Come in, Captain," the booth said, in a voice like oiled gravel. Captain? Why not. I went in.

Inside was a man you could have made two ordinary-sized guys out of, with a head that put me in mind of a tank turret. He evidently got his jewelry cheaper by the pound, and his coat had cost the lives of half the world's silver fox population.

On second thought, maybe he wasn't as rich as he looked. There was a girl sitting next to him, and he hadn't been able to buy her

much to wear at all.

"Wolf, I'm sorry about—you know," she said, in a voice like honey and old bourbon.

And she was looking straight at me as she said it.

"Quiet, Magda," the tank said. "Captain Lupus and I have business to discuss. Why don't you go buy yourself a drink? Hexer will keep you company."

She snorted at him and left. She had a way of leaving that inspired hot pursuit.

"Do you recognize me, Captain Lupus?"

I didn't, but then I didn't recognize myself either. "Should I?"

"No, of course not. I hide behind my wealth, much as you—heh, heh—hide behind a cutlass and a fast ship. I am Constantin L'Avectoi."

And I remembered:

Half my pirate squadron thundered down into atmosphere, half—my half—stayed in orbit to hold the Patrol at bay.

We lost ships, and men—good rogues, too: like Arcot, who once drank half the population of a water world, and Morey, who did an incredible trick with two girls, a zero-gee waterbed, and a quantum black hole, and Wade, who I knew ran a private trade in parsecs and gegenschein—but I never cared.

Kenneth "Wolf" Lupus, bold and free, master of space pi-ra-cee; that was my song—it wasn't very good but it's in the Geneva accords you have to have a song.

There was a flash of light and a sizzling sound, and Constantin L'Avectoi slumped forward. Or he tried; he was too big to slump properly.

I moved quicker than the price counter on a gas pump, but there was no one there but an old man in brown robes showing a kid how to use a flashlight. I went to the next booth.

There were four creatures seated at the table: one looked like a huge sack with an enormous slit across its entire body. The slit opened for a moment, exposing a great, single eye. Next to that was a human: a stout fellow with closely cropped hair and beard sprinkled with grey. Next to him was another human: slender, clad in black, with a droopy blond moustache that made him look like Fu Manchu with a bad peroxide job. And beside *him* was a lively, red-haired woman with a vaguely Egyptian hair-do.

There was an empty chair at the table. I sat down in it. The eye sack staggered to its feet, tossed a few credit coins onto the table, then said, "Ah's am off."

The two men nodded as the eye sack faded into the blue haze. The one with the droopy moustache saw my confused look, then pointed into the smoke. "He talks lak dat 'cause he frum de Southern Cross."

The one with the beard looked over his shoulder at the owl on the white deer's head over the fireplace. He turned back, looking troubled, then said to the man with the droopy moustache, "I don't think he's noticed us."

I frowned. "Do you mean the owl?"

All three put their forefingers to their lips and went "*Sshhh!*"

The owl suddenly flapped its wings and swooped down from the antlers to land on the table in our midst. The owl extended its talons and put a small yellow object on the table, then flew back toward the fireplace.

I pointed at the yellow object. "What is it?"

Droopy moustache frowned. "It's a jellybean."

I reached for it, but the red-haired woman slapped my hand. "Don't! Don't ever take one of those things! If you do, you'll never get rid of it! Never!!"

I sat back in astonishment. Then memory danced by: one of the many disguises of . . . of . . . I couldn't *remember!* Droopy moustache eyed the jellybean, then looked to Egyptian hairdo for guidance. "What'll we do with it?"

The bearded man pursed his lips, then blew on the jellybean, making it roll off the edge of the table. I heard a *crunch, munch, urrrp* sound and looked for the source. On the floor, a short, round-headed creature wearing a slick shiny uniform was licking its lips. I pointed at it, asked, "What's *that*?"

The bearded man shrugged. "An omnivore. It'll eat anything."

Drooping moustache flagged a waiter and ordered a Railroad Martini. The beard ordered a Schlitz beer. I was still working on my Borehole Number Three, and the red-head shook her head. After a few moments, the waiter—a green, muscular humanoid—placed a glass in front of droopy moustache. Several dark pieces of wood floated in the clear drink.

The blond fellow picked out the pieces of wood and flicked them into the omnivore.

"Why did you do that?" I frowned.

He sipped the drink. "It's a *tie* composition. But you can't let them get—ah—some too saturate. Cool." He took another sip, as if that explained everything.

The waiter put a plate of dark, curly hair in front of the other man at our table. The stout man called the waiter back, saying, "You've gotten my order wrong. I want Schlitz beer. This is Schmidt's beard."

The waiter apologized and removed the offending pelt. My mind—I felt I was closing in on *something* . . . but then the old man in brown took a swipe at a black-warted creature with a glowing sword he'd gotten from somewhere or other, and the creature's severed limb landed on our table.

Drooping moustache grabbed the thing and tossed it back, yelling, "Hey, Darkness; you'll need this." The warted creature caught it. Moustache explained, "It's his left hand."

The waiter brought the Schlitz. The bearded man touched his glass to the thin man's Railroad Martini. They both said, "Dune the hatch," and finished off their drinks.

The brawl between the guys in the red shirts and the pointy-eared Mongols was getting louder—and closer. They kept yelling about the USS *Enterprise*, but they didn't look Navy to me. *Enterprise*? Maybe I was in San Fran after all. I nodded to the two men, blew a small kiss to the red-haired woman, and ducked into the next booth. If only I could *remember* . . .

Inside was a thin little man in a black cloak and beret. He had eyes like loaded dice, hands that looked like they'd only be at home in somebody else's pockets. With him was the girl, Magda. Her outfit

was all leather, now; but they wouldn't have had to hurt the cow very bad to get that much hide off it.

"Lance, it's not what it seems like," she said, in a voice like maple syrup and cinnamon. "It's all part of the plot—"

"Hush, Lauralyn," said the sneak. "Buy yourself a drink or something."

"All right, Hexer," Mag—uh, Lauralyn said, and went. If I was lucky she'd keep going out all day long.

"How do you feel, Admiral?" Hexer said. "Is the drug wearing off? Are there many traces of the pirate illusion left?"

I didn't lose my cool. All I said was, "Huh?"

"Yes, Admiral Kildare. L'Avectoi wanted to use your incomparable piloting skills. But to do that he had to erase your true personality and overlay that of a pirate and mercenary scoundrel. He knew that Grand Admiral Lance Kildare of the Galactic Navy would never serve him free-willed."

And I remembered:

Standing on the bridge of my flagship, the *Frank R. Paul's Revenge*, in command of the vastest armada of maneuverable metal the cosmos had ever known. Across the purple void we thundered, a hundred thousand strong, dodging meteors as thick as soup and watching the starry expanse pass at half of lightspeed.

"Admiral," my First Mate was saying in his Irish tenor laced with Scotch, "it's Professor Robert, sir. He has some complaints."

A smile creased my face. "What is it this time?"

"Several things, sir. He says that there isn't any air in space so the Fleet shouldn't thunder and the void shouldn't be purple. And that meteors don't travel around and rain on ships. And that the stars outside ought to be violet-shifted in front and red-shifted in back."

"Tell Dr. Robert not to be so forward," I chuckled. Robert was a good enough man when it came to building a primary matter deinertializer or a subspace probability inverter, but his "pure" theories were wild and impractical. The Fleet not thunder *indeed!*

"Now," I said to Hexer, fixing him with an unblinking gaze, "what about this plot?"

Hexer wavered, as though a different collaborator had seized the pen. "Yeah, it is pretty thick, isn't it?" Then he snapped back. "I can't tell you that," the weasel weaseled. "I'd be killed before I got two words out!"

"Tell me," I repeated, in a voice like Helium II.

"Well, it's—"

One of the pointy-eared Mongols crashed through the side of the booth and flattened Hexer to the floor. I left my spilled drink happily eating a hole in the table and got out before one of the red shirts could come in and get pointy-ears air-borne again.

After dodging another flying body and stepping over a couple more on the floor—the omnivore was getting behind in its work—I reached the bar again. Lauralyn was there, snuggled up next to a big guy in a grey jump-suit with the biggest digital wristwatch I ever did see. I was beginning to wonder if that girl had some kind of skin allergy to clothing; everything she had on now was made of brass, and there wasn't enough of it to make a good lamp.

Near the bar a character with twice the usual quota of fingers was pounding on something that looked like a saxophone, three pianos, and a bassoon.

It's still the same old story,
The plot resolved in glory,
The editors still buy;
And much the same word rates apply,
As time warps by.

There was a sign above the saxpinoon.

REQUESTS ..... Cr 5
"RODGER YOUNG" ..... Cr 10
SILENCE ..... Cr 25

I found a space between the big guy and a chap in baggy tweeds, and told the robot beer-can-opener tending bar to open one for me. Memory was coming back, but just a bit here, a flicker over there . . . I sipped beer and tried to remember. That just made my headache worse, so I turned and mumbled something to baggy tweeds about the fog outside.

"That reminds me of a story," he said. "So heavy was the gloom one afternoon in the Billiards Club that I wondered why the waiters did not turn on the lights. The darkness clung to cornices and seemed to beat down from the ceiling, and it was only low near the floor that we had any light at all.

"Luckily it is this very kind of day that so often encourages Jorkens to tell us of some adventure, and after I had ordered him a large whiskey, this is what he told us:

" 'Perhaps you would like a tale that is not entirely shrouded in

darkness, and what comes to mind at this moment is what happened to me once in America, when I was visiting a well-recommended public house called Gavagan's, and a young chap was demonstrating a photographic device.

" 'Mr. Jeffers aimed his camera at the stuffed owl over the bar,' Jorkens continued. 'There was a bright, noiseless flash, which caused the owl's eyes to light up yellowly for an instant. The shutter clicked, and there was a faint whirr as the film automatically wound to the next frame. "No double exposure," said Jeffers.

" 'Mr. Gross looked up from his Boilermaker. "I got a cousin by marriage that got run in for that once," he said.

" ' "What, making pictures of stuffed owls?" asked Mr. Keating from the Library.

" ' "No, taking his clothes off in the theater. He done it twicet, and the second time—"

" 'Mr. Witherwax interrupted firmly, turning to another Englishman who was visiting Gavagan's that day and asking, "Weren't you about to tell us a story?"

" ' "Why yes," said the Englishman. "Have you ever noticed that, when there are twenty or thirty people talking together in a room, there are occasional moments when everyone becomes suddenly silent, so that for a second there's a sudden, vibrating emptiness that seems to swallow up all sound? It's almost as if everyone is listening for something—they don't know what.

" ' "It was like that one evening when the White Hart wasn't quite as crowded as usual. The Silence came, as unexpectedly as it always does, and Harry Purvis's voice came clear across the room:

" ' " 'The stories that get told in bars,' Harry Purvis said, looking thoughtfully at his beer, 'have a great deal more truth to them than one would think. There was one in particular that I remember, from—I'd better not say just where. Anyway:

" ' " 'The spacer slammed his drink on the bar,' Harry said, 'and looked the robot bartender right in the electronic eye. "I've been from one side of this universe to the other and if I haven't learned anything else, I've learned that you can't believe everything you hear."

" ' " 'The robot swallowed the empty glass, produced a full one. He sighed deep in his gearworks, afraid that this was going to be another burned-out spacer with a tale to tell. It was.

" ' " ' "Callahan's Place was pretty lively that night," the spacer said. "Talk fought Budweiser for mouth space all over the joint, and the beer nuts supply was getting critical. But this guy managed to

keep himself in a corner without being noticed for nearly an hour. I only spotted him myself a few minutes before someone got him started on his story, and I make a point of studying *every*body whenever I'm at Callahan's Place.

" " " " "This guy," the spacer went on, "owned a place himself, name of Draco Tavern, and he was talking about his place:

" " " " " "We get astronauts in the Draco Tavern,' the guy said. 'We get workers from Mount Forel Spaceport, and some administrators, and some newsmen. We get chirpsithra; I keep special chairs to fit their tall, spindly frames. Once in a while we get other aliens. But we don't get many Englishmen.

" " " " "This one,' the guy explained, 'baggy tweeds and all, had a story. Business was slow in the Draco Tavern, just then, so I sat with him and listened.

" " " " " " "Summer had gone," the Englishman said, "and the brighter part of the autumn, and it was dark again in the Billiards Club by the time lunch was over, as though the fog had come down out little street before anyone had noticed he was about, and had peered in at our window. But not as an autumn fog it seemed, but a spring fog.

" " " " " " " 'Whanne that Aprille with his shoures soote ——

[It was the flying Chaucer that broke the spell.]

" " " " " " " 'STOP!' I shouted. *I remembered.* Inside breast pocket: leather case, sharp edges; my badge. And inside . . . Jorkens and baggy tweeds looked at me in shocked silence. Then Jorkens—*Jorkens?* I whipped out the case, flashed the badge, flipped it open to show my Author's Guild card. The dinky-toy pistol was in my other hand. 'You almost trapped me in this diabolical nest of stories within stories, frames within frames, but now——'

" " " " " " " " "

—— and like farmhouses after a Kansas twister, the close-quotes came raining down, breaking the spell. The Billiards Club flickered out; so did the Draco Tavern, Callahan's Place, the White Hart, Gavagan's. The Billiards Club flared and went out again, then the Spaceport Bar, the Silver Eel, the Aquilonian Arms . . .

The *Aquilonian Arms?*

I looked around wildly. The fight over in the corner was still in full swing, but now the red shirts were wearing helmets with horns and chain-mail vests, and the big guy in grey had stripped down to fur shorts and a sword and enough muscles to stock a meat market —— everything flickered again, only *backward* one flick —— and the big guy was *two* guys: one a big, blond barbarian and the other

a quick little guy who flicked the badge right out of my hand. I clicked off the safety and fired; the gun spat flame. One inch long, barely enough to light a cigar. It *was* a lighter. And then I was falling —— falling into a black hole, with the green, log-log grid lines spiraling up and down the sides, up and down and down and

———

The man seated in the center of the panel of seven nodded at the doctor, and the fellow in the wheelchair was rolled from the room. The door closed, leaving the room silent. The man in the center sadly nodded his head. "He was one of our best."

"Too bad," said another, wiping away a tear.

The man in the center pressed a button set into the surface of the long table. A door opened and in walked a tall, rugged man smoking a pipe and wearing a jacket, elbows covered with shooting patches. The man in the center looked at the one in shooting patches. "You heard everything?"

The man removed the pipe from his mouth and nodded. "I heard. Pitiful."

"How do you explain the gun?"

"Illustrator's fault. The lighter was the only model he had to draw from."

The man in the center shook his head, then looked up at the one with the pipe. "It looks impossible, but do you think you can do it? Can you close down the Spaceport Bar?"

The man in tweed stood erect, slightly offended. "Have I ever failed the Author's Guild Literary Cliché Squad?"

"No." The man in the center shook his head. "You've never failed us. But . . . you saw what happened to—"

"Yes, yes." The man in tweed waved a hand impatiently. "He made a mistake. They got to him first with one of their plots. That won't happen to me."

The man in the center nodded. "Will you want one of the first-run copies of this deposition?"

The man in tweed replaced the pipe in his mouth. "No. I'll wait for it to come out in paperback." He turned and left the room.

One of the board members muttered, "As soon as he does this job, then **he** *gets the blue pencil. Wait for it to come out in paperback, indeed!"*

The hearing was adjourned.

SOLUTION TO G. HOVAH'S DECISION PARADOX (from page 42)

Abe said to himself: "There are just two possibilities. The opaque box is either empty or it contains the check. Suppose it's empty. If I take only the opaque box I get nothing. But if I take both boxes I get at least a hundred dollars. Suppose the opaque box is not empty. If I take only it, I get the check. But if I take both boxes I get the check *plus* a hundred dollars. Either way I'm sure to come out a hundred dollars ahead by taking both boxes!"

Each argument seems impeccable. According to experts on decision theory, which one is right? See page 167.

ON HYPERSPHERICAL SPACE AND BEYOND
by Rudy Rucker

The author, now 33, spent the past two years at the Mathematics Institute of the University of Heidelberg as a guest of the Alexander von Humboldt Foundation. He has written and published Geometry, Relativity, and the Fourth Dimension; *and his novel,* White Light, *is scheduled by Ace Books for the winter of 1980. Professor Rucker and his wife and three children plan to move back to the United States shortly.*

In the Middle Ages, map-makers sometimes represented the surface of the Earth as a vast disk with a spiky chain of mountains around the circumference. Here and there the sea found a passage through the chain, but those who sailed through were sure to fall off the edge.

To the early thinkers it seemed that the only alternative to a finite space with edges was an infinite space. They were scared of infinity, so they put up with edges. Of course, now we realize that a *curved* space (such as the surface of a sphere) can be finite and still not have edges.

I've always wished that it had turned out that the surface of the Earth really *is* infinite. I feel crowded in a finite world. Imagine what it would be like to live on an endless plain studded with infinitely many civilizations. You could travel for a whole lifetime in any direction you chose, probably never encountering a city quite like the ones you'd already seen. Widely separated species would come from completely different evolutionary streams, and one could hope to find all the aliens of science fiction simply by walking far enough.

No living space short of infinity is really enough for a true claustrophobiac like me. As soon as I was old enough to realize that the Earth is finite, I started thinking about other planets . . . of endless space studded with infinitely many stars. It seemed self-evident that space must go on forever. How could there be an edge of space?

The depressing fact of the matter is that almost all the competing cosmological theories of the universe predict that even though space

has no edges it is finite.

The trick is basically the same one as is used with the Earth's surface. The surface of the Earth is finite even though it has no edges . . . it's curved into a sphere. The space of our universe is finite even though it has no edges . . . it's curved into a hypersphere.

Our space bends back on itself. If you rocket away from Earth long enough you simply end up back here . . . with nary a wall or a yawning void to be seen.

It's like someone travelling along the Equator. (Figure 1) He travels straight ahead, never bending to the left or right . . . but yet he ends up back where he started. Why? The two-dimensional (2-D for short) surface of the sphere is curved in a third dimension.

Assuming that our space is hyperspherical, this means that any seemingly straight path in our space is really curved in the fourth dimension. And if you go far enough, you end up back where you started.

What sort of evidence is there for the claim that our 3-D space is curved in the fourth dimension? To really understand what's involved here, it's helpful to think about some creatures for whom space is 2-D.

Imagine a race of robot surveyors on wheels. Of course the bodies of these robots are 3-D, but we will build them so that their idea of

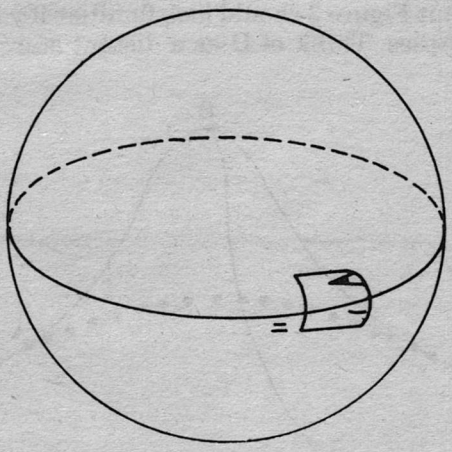


Fig. 1

space is 2-D. They can go forward and reverse, left and right . . . but we won't tell them about up and down. They can roll around and signal each other, but we won't give them eyes. Instead they'll just have a simple guidance system for determining their position (in latitude and longitude). They won't be able to notice how fast they're going (they won't "feel" themselves rolling down a hill), but they will be able to measure distances.

So there they are, rolling around a field and measuring things. Now remember that for these robots, space is 2-D. They have no conception of up and down, of vertical displacement, of thickness. All they know is forwards and reverse, left and right.

Let's say that the field the robots are in has a big hill in the middle. (Figure 2) How will these 2-D minds perceive it? Not as an upward bulge. Even as they drive over the hill, the robots still only have the two degrees of freedom: forward/reverse and left/right.

But they will notice something. They will notice that there is an unusually large amount of space in the middle of the field. The shortest path from D to E is not straight through S, but is rather the dotted line which bends around the hillside.

Let's look at this from above. (Figure 3) The dotted line is the shortest path from D to E. The direct path through S is longer because the space of the field's surface is curved in a dimension perpendicular to this map.

Something about Figure 3 should look familiar if you've ever read an article on eclipses. Think of D as a distant star, S as the Sun,

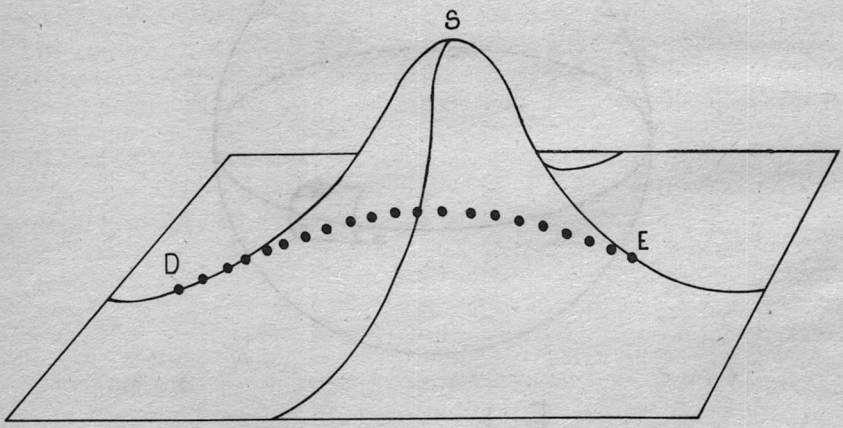


Fig.2

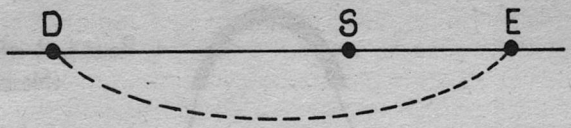


Fig. 3

and E as the Earth. The dotted line indicates the path which a light ray from D to E actually travels. (To observe this you need an eclipse so that the sunlight doesn't wash everything out).

Now we know that light always travels from D to E along the shortest possible path. If the path bulges away from S, what is more natural then to conclude that there must be a lot of extra space near S? . . . so much that it's actually shorter to take the trouble of skirting around S!

It's a little like finding twenty-five beers in a perfectly ordinary looking case. Where does the extra space come from? Look at that field with the hill again. There's more surface area in there then one would have expected . . . because the surface curves into the third dimension. In the same way we expect that the space near massive objects bulges out into the fourth dimension.

This is indeed the case. The denser and more massive the star, the greater the stretching of space near that star. But curiously enough, the situation *inside* the star is quite different. Here space is shrunken or rounded-off instead of stretched.

Near a star, space is saddle-like . . . or "negatively curved." But inside the star, space is sphere-like . . . or "positively curved." The one sort of curvature acts to increase the size of the universe, and the other acts to decrease the size of the universe. On the large scale the shrinking factor wins out and bends our universe into a finite hypersphere.

To grasp how these two kinds of curved space fit together, let's drop down to a 1-D space, Lineland. (Figure 4)

Imagine a line with a bunch of segments sliding back and forth. Each segment has a voice at either end, one tenor and one bass. The line transmits sound, so by listening carefully they all know where, and how big, everyone else is.

Fig. 4

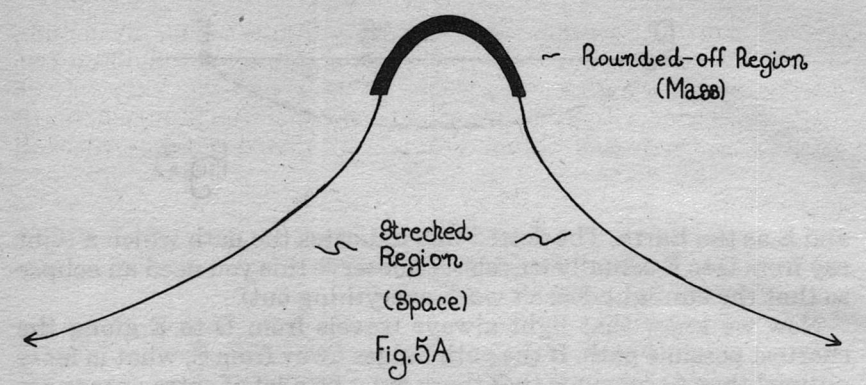


Fig. 5A

Now, the Einstein theory of gravity predicts that the space around a really massive segment in Lineland would have to look something like in Figure 5A.

We can think of the circular cap on top of the bulge as exerting a shrinking effect because if it were not there we would get an endless chimney of space. (Figure 5B). Such an endless space-shaft would correspond to the sort of curvature one expects from a degenerate, point-sized mass with no interior to round things off.

The actual over-all bending of space into a huge hypersphere comes about as a result of the way the curvatures induced by the

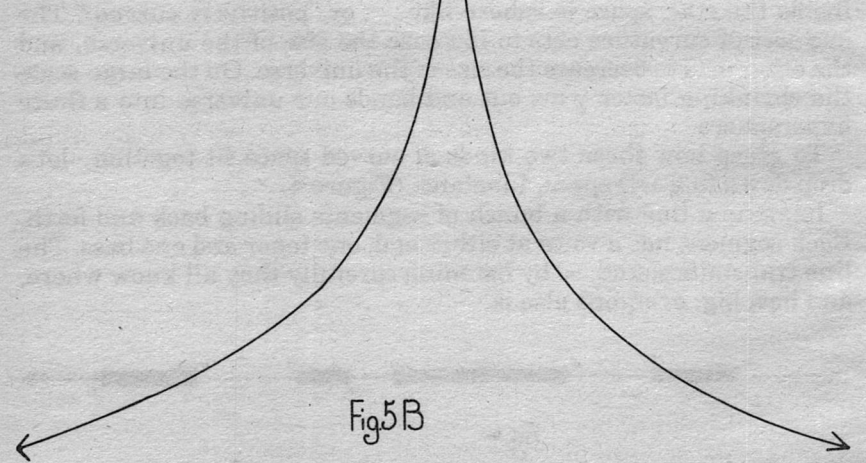


Fig. 5B

various stars fit together. Not only does Nature abhor a vacuum, she abhors corners. Any basically-straight Lineland including two gravity bumps would have a corner. (Figure 6A) The only way to avoid the corner without changing the shape of the bumps is to tilt them away from each other. (Figure 6B) Which puts an over-all

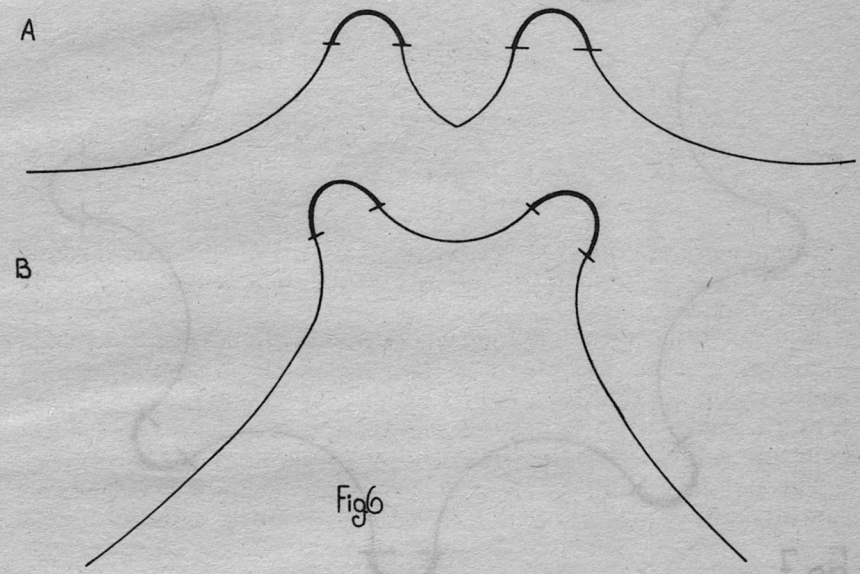


Fig6

kink in Lineland. Keep it up and you've got Circleland. (Figure 7)

How big is our hyperspherical universe anyway? One informed guess is that it's 80 billion light-years around right now, with a total of 2.6×10^{23} stars.

To get a handle on this estimate for the number of stars, think of it as follows. The average galaxy has 100 billion suns. Galaxies tend to come in clusters of 130 each. (We happen to be in a rather small cluster of only 16 galaxies, known as the Local Group.) If you take 20 billion clusters of 130 galaxies each, with 100 billion suns per galaxy, that gives you the 2.6×10^{23} stars.

Is that all there is? Just a lousy twenty billion clusters? Get me some air, quick!

But wait. Why shouldn't there be other hyperspheres . . . other universes floating around in hyperspace? It makes a sort of sense to think of ours as just one of the many possible universes, just as it makes sense to think of our planet as one of many.

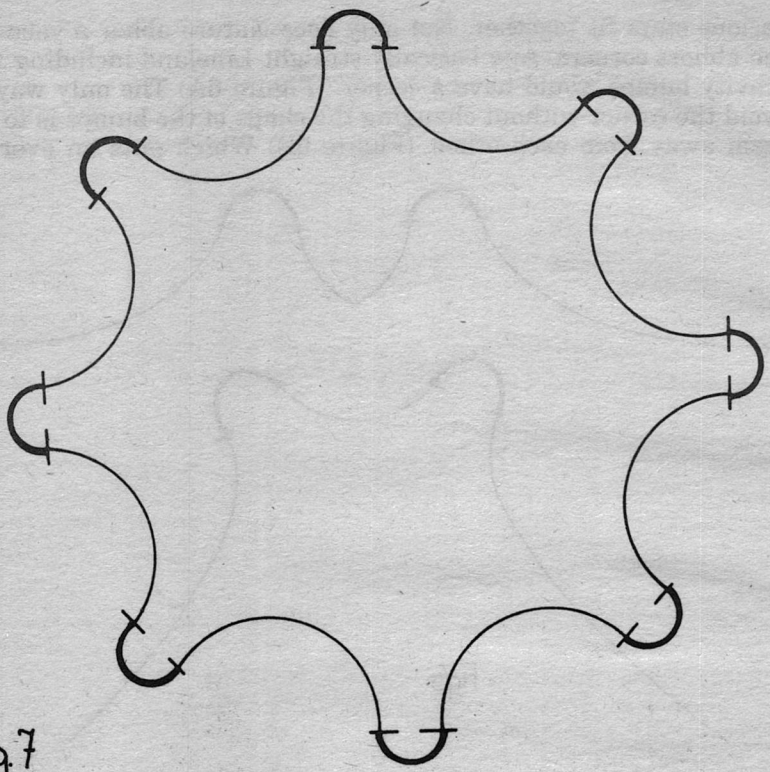


Fig. 7

If Earth were the only planet anywhere, then somebody would have to come up with an awful lot of explanations. Why are we just the right distance from the sun? Why did life evolve? Why is there air? It's hard to answer questions like this with anything short of invoking a God who takes a personal interest in the human race.

But as long as there are trillions upon trillions of planets, then the fact that Earth has such and such properties does not really *require* explanation. It's just a statistical inevitability that there be a planet more or less like this one, on which beings more or less like us have evolved.

If there were only one daisy in existence, you would suppose the fact that it has, say, thirty-eight petals to have some deep meaning. But there are millions of daisies . . . and if this one has thirty-eight petals, then so what? The one over there has forty-three.

If the force of gravity were somewhat stronger, then everything

larger than an asteroid would collapse into a black hole. If Planck's constant were bigger, then no stable chemical compounds could form. If the nuclear forces were a bit different, then every star would be a supernova. *Why* is our little hypersphere of a universe designed to support us so comfortably? *Why* is it made of twenty billion galaxy clusters instead of eight quadrillion? *Why* does it happen to be 80 billion light-years around?

No special reason. This just happens to be a universe like that. But there's lots of others. Now for the fun. How can we get to one of the other universes?

Obviously the answer to this is going to depend on how one imagines the various universes to be arranged in hyperspace. There's a famous old principle ascribed to the mythical magician Hermes Trismegistus: AS ABOVE, SO BELOW.

The point of the principle is that it's usually helpful to think in terms of analogies. Our universe consists of spheres (stars and planets) floating around in 3-D space. That's the BELOW part. I propose that on the next level we have a lot of hyperspheres (universes) floating around in 4-D hyperspace. That's the ABOVE part. Now, how do we get from one hypersphere to the other? Let's use another analogy.

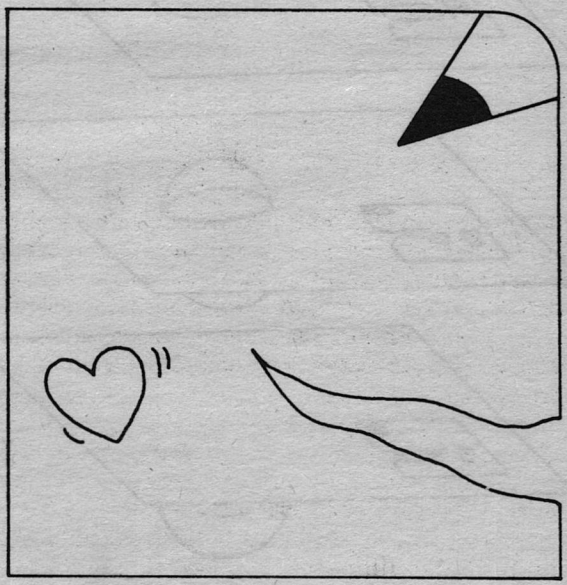


Fig. 8

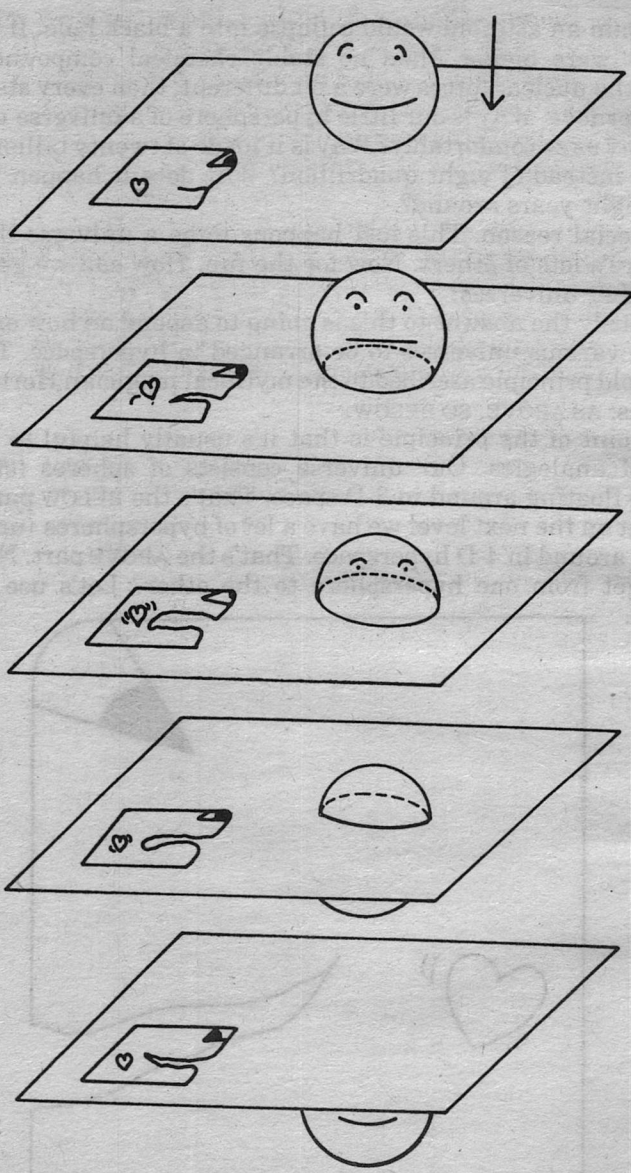


Fig.9

Meet A. Square. (Figure 8) Unlike those surveyor robots, A. Square doesn't just *think* he's 2-D, he really *is* 2-D. In his 1884 classic, *Flatland,* Edwin Abbott describes A. Square and his life. The high point comes one New Year's Eve when one A. Sphere decides to pay the stoned-out Square a visit.

Of course there's no way the 3-D sphere can fit all of himself into the 2-D space of Flatland. The only way he can show himself is in installments . . . by moving *through* A. Square's space. (Figure 9)

Now, A. Square has no notion of a third dimension. What he sees is simply a point which grows into a large and menacing circle . . . and then shrinks back to a point. It is very hard for him to grasp that all of the different sized circles he sees are somehow stacked up in 3-D space to make a single object. You might pause now to imagine what you'd see if a smallish hypersphere moved through the bit of 3-D space in front of you.

Finally A. Square gets the idea. *Flatland* ends with him in jail for preaching about the third dimension. You can find out more about A. Square in Dionys Burger's *Sphereland* (Apollo 1965) or my own *Geometry, Relativity and the Fourth Dimension* (Dover 1977).

As it turns out, the Flatlanders eventually discover that their space is finite and without edges. If they slide straight ahead in any direction long enough, they always end up back where they started. Of course A. Square realizes that the space of Flatland is curved into a sphere, and he suspects that there are many other such universes separated from him by the mysterious third dimension. (Figure 10).

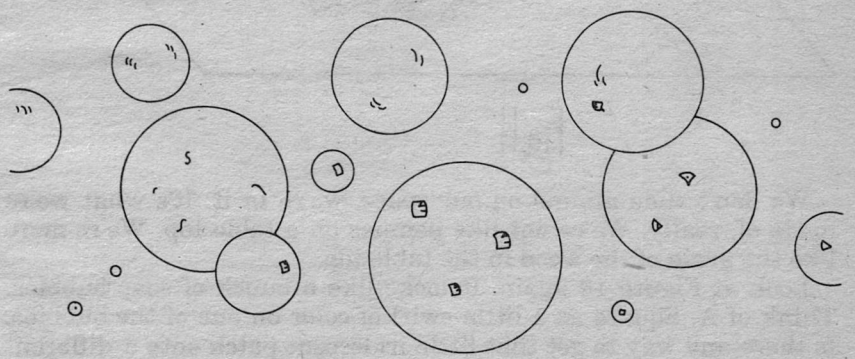


Fig.10

How can A. Square travel through 3-D space to reach one of the other universes? What if A. Sphere came and pulled Square off the surface of one sphere and put him down on another? No good.

The trouble is that on the sides A. Square is wide open. All he has for skin is that line around his body. Like, imagine some 4-D being's hand appearing in front of you. You grab on, and he gives you a mighty pull into hyperspace. But . . . yuk . . . he only pulls *some* of you along, and the rest of you sort of settles down into a mound with two eyes on top. (Figure 11)

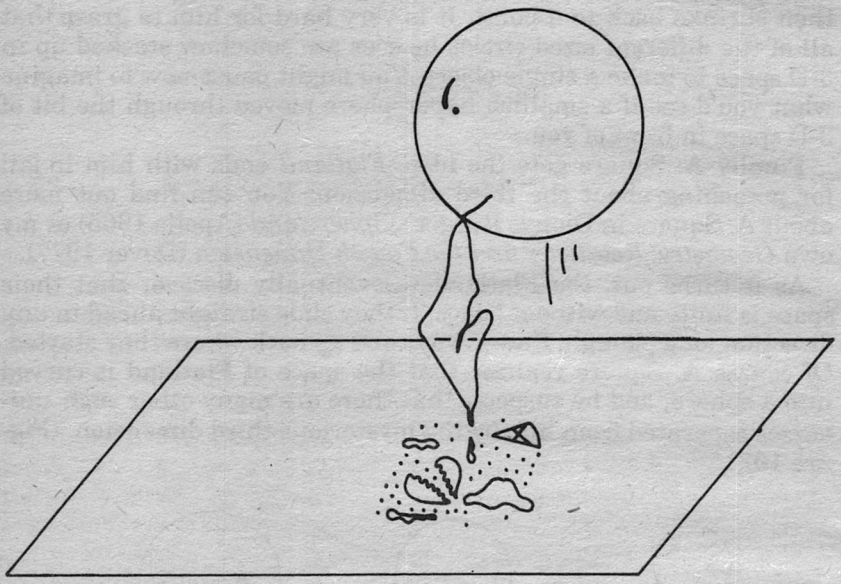


Fig. 11

We don't slide around *on* our space, we're *in* it. It's what we're made of, really. We're not like pennies on a table top. We're more like the grain of the wood in the table top.

Look at Figure 10 again. It looks like a bunch of soap bubbles. Think of A. Square as a little swirl of color on one of the bubbles. Is there any way to get that little iridescent patch onto a different bubble?

If you distort a soap bubble enough it pinches into two. If two bubbles bump each other, they merge to become one.

Suppose that A. Square can manipulate the curvature of the Flatland space. Then he can force out a bulge, get the neck to contract, and pinch off into his own tiny spherical space. (Figure 12) He hopes that eventually the space of his travelling sphere will bump into the space of a new universe and merge in. (Like Figure 12 in reverse order.)

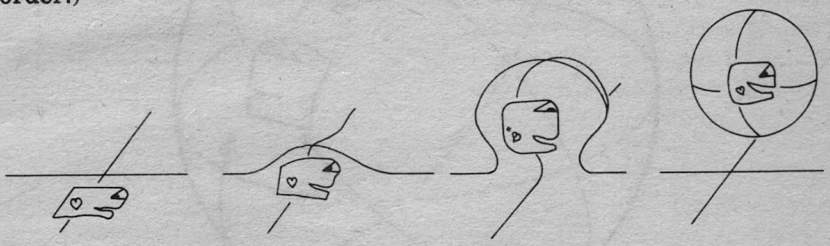


Fig12

The idea of bits of our space pinching off into separate droplets is familiar to cosmologists. Strong gravitational waves can be produced by black-hole/white-hole type events where large amounts of mass-energy are being bandied about. These waves are more or less like ripples in space. If the rippling gets strong enough, then regions of infinite curvature . . . crests . . . form and droplets fly off. (Figure 13)

So the way to pinch off into a little hypersphere of your own might be to go gravity-wave surfing near a black hole or a quasar. Alternatively, one could try getting inside a huge hollow sphere of matter, null-raying all the electric charge off the matter, and letting it collapse to a spherical shell black hole. A hyperspherical space-droplet would probably pinch off near the center before everything came crashing in. I'll let you try it first.

Well, what do you know . . . it worked! There you are, floating in a hypersphere of space one kilometer in circumference. It's dark,

Fig. 13

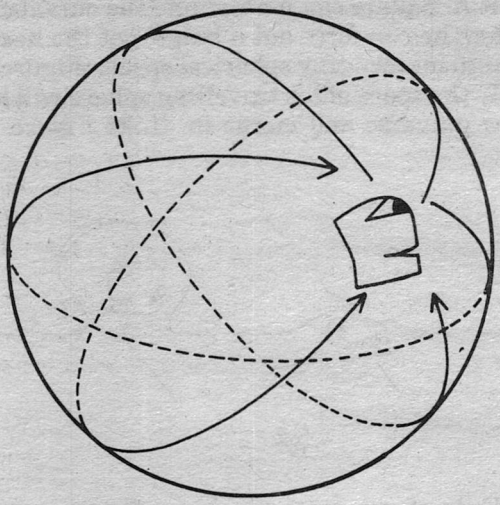


Fig.14

really dark. You fumble a flare out of your spacesuit, light it . . . suddenly there's light everywhere. A kilometer off is this huge, weirdly distorted figure. Using your hand-held jet, you move towards the monstrous ghost, leaving the flare behind. The ghost recedes, speeding up and slowing down when you do. Before long you're back at the flare.

It's the same for A. Square of course. All of his lines of sight bend around his spherical space . . . so no matter which way he looks he sees himself. (Figure 14) And if you see a piece of someone no matter which way you look, that means he looks very big to you. And it's clear that A. Square can visit every spot on his sphere in a fairly short time.

(Incidentally, the area of a sphere E kilometers around is E^2/π square kilometers, and the volume of a hypersphere E kilometers around is $E^3/(4\pi)$ cubic kilometers. The first formula follows since a sphere with radius r has surface area $4\pi r^2$ and a circumferential distance around of $E = 2\pi r$. Of course E^2 is $4\pi^2 r^2$, so the surface area is given by E^2/π. Ask your local Calculus II teacher about the second formula.)

Meanwhile, back in the space droplet, you decide that it's getting too cramped in your space-suit. You take out a tremendous rubber

balloon, crawl inside it, and begin filling it up with air from your tank. It's nice in there . . . you don't have to see that weird, inside-out ghost image. You take off your suit and loll against the balloon's gently curving wall. The tank next to you is hissing away, and the balloon is growing.

Suddenly something is wrong. The balloon wall goes flat and starts curving away from you. You are outside the balloon! The tank is still next to you, but the air seems thinner. The balloon rapidly shrinks away from you, down to beach-ball size, and collapses. What happened?

Push it down a dimension and look at A. Square. (Figure 15) A Flatland balloon is just an elastic circle. When it expands past the equator it is able to shrink back down to starting size . . . on the other side of the spherical space.

This is a really odd feature of hyperspherical space. Any sphere which expands long enough ends up by expanding past the maximum possible size (E kilometers around) and "expanding" on down to point size. You can visualize this in our own universe by thinking of a fleet of survey ships flying away from Earth in different directions. If they travel at the same speed, the ships will lie on the surface of an expanding sphere centered on Earth. At some point the ships will find that they are getting closer to each other . . . and that the unsurveyed space ahead is a shrinking sphere. When they meet up, they'll be as far from Earth as it's possible to get in our space. And there would be no surprises left.

You, drifting from hypersphere to hypersphere with your space-droplet, would probably feel sorry for those survey ships, stuck in a single finite and fully known universe. But how many hyperspherical universes do you expect to find?

Suppose we take the AS ABOVE, SO BELOW principle to its logical conclusion. Then the hyperspace where the hyperspherical uni-

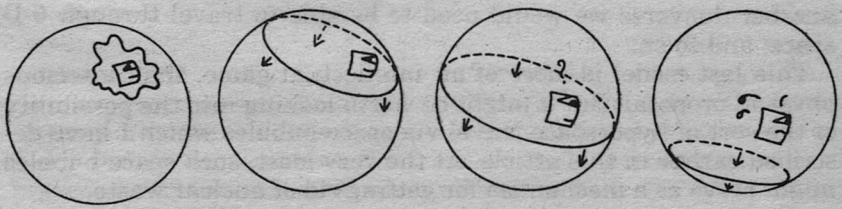


Fig. 15

verses float must, in turn, be finite and unbounded . . . a hyper-hypersphere.

Call a hyperhypersphere containing a bunch of hyperspherical universes a *duoverse.* Although a duoverse is finite, can we not expect that there will be many duoverses drifting about in 5-D space?

How many duoverses? Well, keeping the analogy running, we would expect them to be grouped into finite *triverses,* but that there would be lots of triverses, and so on and on. (Figure 16)

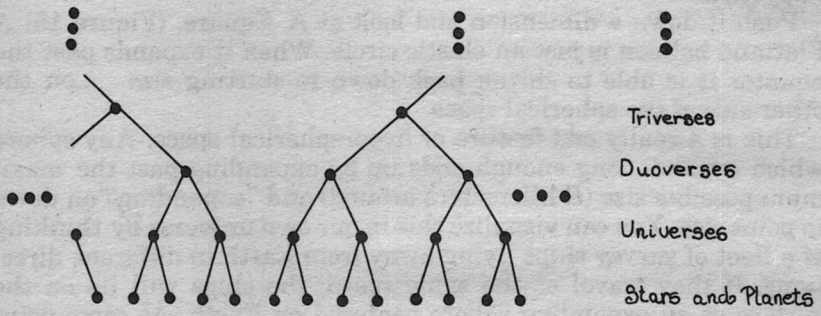


Fig. 16

The upshot is that if we are prepared to allow an endless tower of higher and higher dimensions, then the cosmos can be infinite over-all, but finite at each of its dimensional levels. There would be infinitely many stars, but to get to one in another universe we would need to be able to travel through 4-D space; to get to the stars in another duoverse we would need to be able to travel through 5-D space; and so on.

This last model is more of an intellectual game, than a serious physical proposal. But it might be worth looking into the possibility of the sort of hyperspace travel via space-bubbles which I have described earlier in this article. At the very least, such space-bubbles might serve as a mechanism for getting rid of nuclear waste.

Improbable Bestiary: THE CENTAUR

The creature called the Centaur (as you may already know)
From head to hips is human, but equestrian below.
And thus he has a problem you might notice at a glance:
He cannot wear a suit unless it has two pairs of pants.
His top half dines on mutton chops,
The bottom favours hay
And so, perforce, their dinner course
Brings mutual dismay
Because, you see, they can't agree
On what to eat which way.
(When offered pie, one end votes *"Aye!"*
The other end says *"Neigh!"*)

If front and back both want a snack they find themselves unable:
When one end picks up knife and fork and seats itself at table
The end that votes for hay and oats is halfway to the stable.
(This doesn't make much sense, but what the hell:
it's just a fable.)

The centaur Sagittarius had hobbies vast and various
And yet he was a flop at every sport he chose to play.
At tennis, golf, and soccer he
Was nothing but a mockery
And things got even worse when he began to try croquet.
(His feet got in the way.)

"I may not be the type," he said, "for physical athletics
Because I'm neither horse nor man . . . so blame it on genetics.
But there *must* be a sport where I've an asset, not a weakness . . .
Eureka! I'm a thoroughbred! I'll sign up for the Preakness!"

And thus came the event that makes
Our Centaur feel so cocky.
His back end won the Derby Stakes,
His front end was the jockey.

—F. Gwynplaine MacIntyre

OH THE THINGS THOSE GALAXIES SAY!

by Ralph Roberts

art: George Barr

The author claims to have read everything ever written by Robert Heinlein, including shopping lists. He also reports that he's progressing well with the complete works of Isaac Asimov, but is beginning to feel that such a task may be beyond the life expectancy of the average human. This story marks his second appearance in this magazine.

"They talk to each other, you know."

I sat my beer back on the bar and swiveled on the stool. "You mean the stars, the stars speak among themselves?"

"No, not stars, the *galaxies*, man. The galaxies themselves think and speak and live. They rule the universe, not us; we're nothing."

"Oh come on, Murdoch," I said with disgust. "You're drunk."

"May be drunk," Murdoch slurred, "but I know what's happening out there. You're a reporter and I got a story for you."

The bar was virtually empty except for us, a few solitary drinkers, and the robot bartender who was studiously ignoring everybody. I pulled my stool a little closer and lowered my voice anyway. "How do you know, Eli?" I asked gently.

"I've heard the conversations." He turned his head and looked at me; his eyes were a little wild and unfocused. "But don't tell, they said not to tell."

"The galaxies told you not to tell?"

"No," he muttered. "The government, my bosses at the Federation Scientific Agency, they don't want people to know." He raised his voice. "Everybody should, it's important."

"Calm down, Eli," I said and waited while he got the robot's attention and ordered another drink.

"The known Universe," he said ponderously, "is over seventeen billion light years in diameter and contains several billion galaxies, quasars, pulsars, and God knows what else. A few of them are highly intelligent and talk to each other. I've heard them, you know."

"Listen," I said, "even if the galaxies or whatever talk, so what? Our nearest galactic neighbors, the Magellanic Clouds, are over twenty thousand light years away. Gonna be a mighty slow conversation."

Eli rocked his glass and watched the dark, oily liquid swirl for a moment. When he looked at me, his drink-ravaged face showed disgust at my slow thought processes. "About ten years ago," he said, "you did a feature on the use of faster-than-light radio in astronomy. Remember that?"

I nodded. "Sure, but you told me yourself that FTL radio was useless, that no natural sources of Karsen waves existed. So did every other expert I interviewed."

"Wrong. I said none had been found yet."

I casually flipped on the little audio recorder that hung from my belt; visuals could wait. "And you have found some natural radio sources of Karsen FTL energy?" I asked, to get it on the recorder.

"What do you think we've been discussing?" Eli said and waved

for the bartender. "I told you the galaxies talk to each other."

"All right, Eli, let's get a little more specific. How can you hear these stellar conversations?"

He secured yet another drink from the patient robot and took a sip. "You know I've been outsystem, Bill?"

That I did know; he'd been away from his Agency post for a year or more. I refrained from informing him of my suspicion that the Feds had removed their embarrassment to some institution to be dried out. I was content to just nod agreement.

"Well, after years, those idiots at the Agency finally began to believe my theoretical proofs that natural Karsen sources existed. They offered me a chance to prove it in practice. Course, it turned out they really had something else in mind all along." He peered blearily at me. "You aren't recording this are you?"

I smiled reassuringly. "Would I do that to you, Eli?"

He continued. "We went out into deep interstellar space, well away from all traffic lanes, and built a space station." He paused and swallowed some more of his drink. I was still nursing the one beer.

"I had priority on everything," he said. "From computer time to manpower. And we used force fields to generate the largest FTL parabolic-dish antenna in existence. Hundreds of kilometers across and fully rotatable; we just turn the station, which is also the dish's feed point. Bandwidth's infinitely variable, and you won't believe the aperture and gain figures."

"And you heard galaxies talking?"

"Not at first," he said. "We just started charting positions of natural Karsen sources. We logged several hundred the first month. My purpose at the beginning of the project was comparing the FTL coordinates of galaxies to their already determined location via optical and conventional-radio data. That would tell us where they were at the present time and how far they had traveled in the thousands of years that their light had required to reach us. We were going to have, eventually, a current plot of the known Universe. But everything changed when I began to notice anomalies in my FTL data."

"Several hundred," I said in amazement. "But why hasn't anybody else reported any? Karsen FTL radio has been around for a hundred years or so."

"A combination of not knowing what frequency spectrum to search, where to point antennas, or exactly what to listen for."

"Where are these Karsen sources usually found?"

"At or very near the center of galaxies," Eli said. "You know astronomers have postulated the presence of black holes near galactic centers for centuries, especially in spiral galaxies like our own. I believe that the black holes correspond to the heart of the galaxy while the Karsen source is both its brain and communicative organ. The stars themselves are like cells in our body. Our galaxy, the good old Milky Way, has over a hundred billion stars, y'know."

I nodded again, completely fascinated. I was also amazed at how glib the old boy was despite the astounding quantity of liquor he already had on board. "Have you told anyone else about these intelligent galaxies?" I asked casually. Always pays to see if you've been scooped. I mean, just in case I decided that Murdoch wasn't relating a booze-induced fantasy.

"No, those idiots put a lid on my findings." He leaned closer and lowered his voice a little more. "They don't believe me, and they don't want any other governments to know that we can intercept Karsen communications so easily."

"Why?"

"They're eavesdropping, y'know. Ours was just the pilot station. The Federation is gonna know where every ship is, what they're saying, and what planet-based communicators are relating. It's all very hush-hush." He grinned for a moment and put his finger to his lips. But his frightened look quickly came back.

"Hmmm, so they classified your findings," I commented, to keep him going.

"Yeah," he answered nervously and took a long pull at his drink. "But, people are gonna have to know. They can't keep this secret."

I shrugged. "Don't see why not, Murdoch. Nobody's much interested in our government's espionage activities, and the idea of an intelligent galaxy is a bit far-fetched." Inwardly, I was disappointed. Not much of a story here, maybe a nice feature on natural Karsen sources, but nothing fantastic. I started to turn off the recorder.

Old Murdoch suddenly reached out one bony hand and grasped my arm. He was surprisingly strong. "Listen," he said, "you don't understand. We're all in terrible danger."

I glanced around the barroom. Just us, and the robotic dispenser of good cheer polishing plastic beer-steins at the other end of the bar. "From whom?" I asked patiently.

He looked exasperated. "From the Milky Way, from our own galaxy."

"I don't follow."

He nodded and took a somehow desperate gulp of his drink. I

knew something was really bugging the old boy. "I did quite a bit of research on this galaxy's natural Karsen source," he said hoarsely, "before they shipped me back here for what they said was to be just a short rest." He leaned even closer. "I escaped from that place, y'know."

Great, I thought. The Feds put him on the funny farm; he escapes; and here I was half-believing his cock-and-bull story about thinking, talking galaxies.

"All right, Murdoch," I said somewhat forcefully. "Let's be a bit more specific. What did one galaxy say to the other?" While I instantly realized that question sounded flip, down deep I was actually starting to believe the old scientist—he'd been pretty well thought of in his day, you see. He didn't even notice my tone of voice. Too preoccupied with his thoughts. He shuddered visibly and gazed at me with drink-bleary eyes.

"They didn't give me enough time to translate, if we mortal mites can even comprehend the thoughts of such cosmic creatures." He waved for the bartender once more. We waited while his empty glass was replaced by a full one. I paid. "Also," Murdoch continued between thirsty sips, "the time scale is not the same as ours. It takes weeks for syllables, months for words, years for sentences in their speech. They have all of time; they are the universe."

"Okay," I said, starting to feel a little disgusted again. "You don't know what these huge, natural Karsen sources are saying. So, why so worried? Why sop up all the joy juice, Murdoch?"

He gave me a slightly annoyed look. He was still a mighty smart man. "I got a sense of great pain," he said. "Our galaxy is hurting. Know why?"

I shrugged.

Murdoch convulsively swallowed a healthy swig of his liquid nirvana and grimaced. "Everybody uses Karsen FTL radio now," he said. "Not only humans but scores of the more advanced alien races. At any one time there must be several hundred thousand Karsen sources in this part of the galaxy." He turned to me and stabbed my chest with a twig-like finger to emphasize his point. "I think the Milky Way has one hell of a headache. Imagine what it would be like in your body if a huge horde of germs was making a constant, raucous din. It'd drive you to distraction."

I nodded; that was a disquieting thought. "That why you're so upset?" I asked.

"Oh no," he quickly responded. He paused and pulled at his drink again. I was gonna have to pour him into a bucket to get him out

of here. "Our galaxy," he finally said in a low, trembling voice, "has been talking to just one place. He's beaming his voice to a point in Andromeda. And he's being answered."

"Ummm, I see. So? A conversation between friends perhaps?"

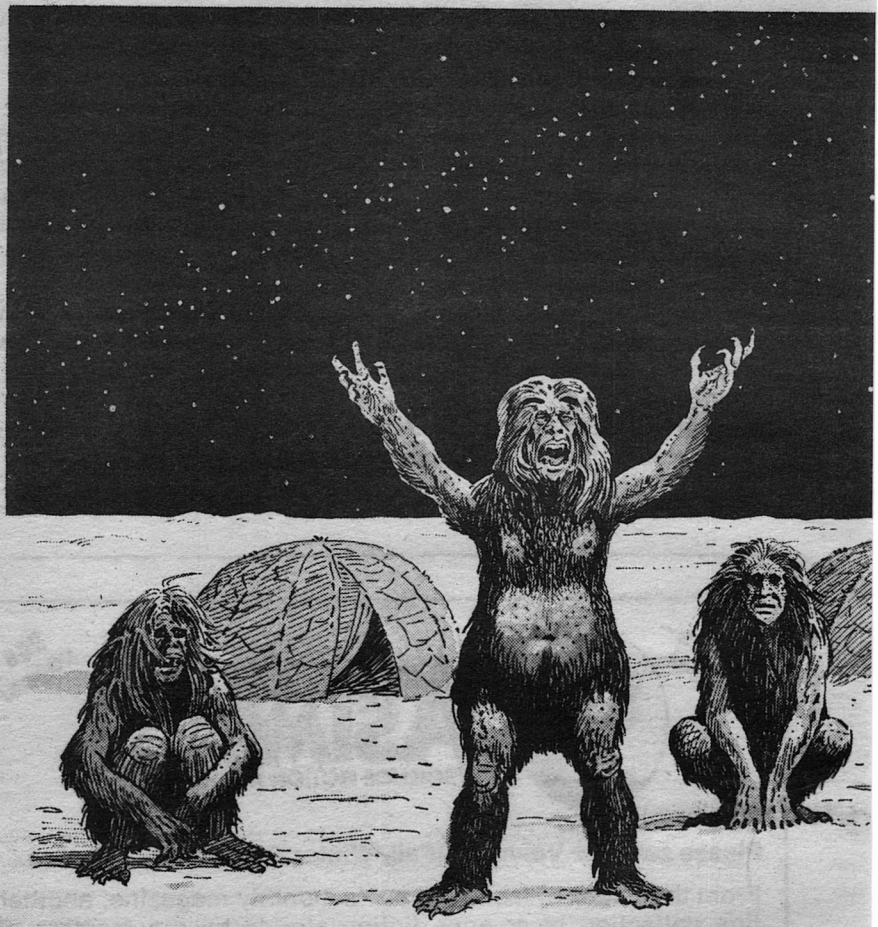
"No," Murdoch said positively. "Y'know, even the old-time visual and conventional-radio astronomers knew that the Universe was expanding, that galaxies were moving away from each other. They could tell by the doppler shift, by the light spectrum shifting toward the red end as galaxies sped away from our own."

"I know that."

He ignored my comment. "Well there's one galaxy, M31 in Andromeda, that's moving toward us—its spectrum is shifting toward the blue end, closing with us."

"Meaning?"

Another shudder shook Eli Murdoch's frail body. "I think he's found a doctor who still makes house calls."



CATCH THE SUN

by Barry B. Longyear

art: Frank Borth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Some planets show the same face to each one's star and are, consequently, half-broiled and half-frozen. Others turn so fast that they just begin to cool down when dawn sweeps across them again. But what of a planet that turns so slowly that the dawn moves at a slow crawl; what of the beings that follow the sun on an endless trek . . .

Synya squatted in the snow, her thorny back toward Kadnu's dying light, as the last of the far vine-masters joined the circle. She glanced at the two vine-masters to her right, then looked up above the ring of gray-maned heads for the light among Kadnu's Sparks that would grow bright, bringing the future of the vine people. She tossed her mane and swiped at the snow with a clawed hand, sending a spray of crystals into the air. She looked at the soft whiteness in front of her, then dug the claws of her hands into her haunches. *Better that the ice should claim us than the future.*

"Synya." Nothing but a click and a hiss, but to the vine people it was a name. "Synya, we are all present."

Synya looked up and stared with unblinking eyes at the speaker. "I see this, Morah. Kadnu has not blinded me despite my many growths."

The one called Morah squatted silently for a long moment, then held out his long muscular arms. "Why are we here, Synya?"

Grey manes nodded. Another vine master, a long leap to Synya's left, turned his head. "It has taken me three growths of fast travel to meet here at your call. The people of my vine will not see me for more than another three growths if I should leave at this moment." He clawed at the snow. "Look at this, Synya. I must move with Kadnu for a growth before turning toward my vine if I am to avoid the ice. Why are we here?"

Synya looked again at the two vine-masters to her right. Shadig, the closest to her, shook his mane and cast down his glance. The next vine-master, Neest, folded her arms across her breast and studied the snow. "You are the oldest, Synya. It is your place."

Synya looked around the circle of squatting bodies, then looked up again for the spark that would grow bright. *How to tell them that God is but a ball of burning air, that Kadnu's Sparks are but more such balls—many much larger? How to tell them that the Endless*

Trail is not endless, but is nothing but a futile trek around a great ball? That we will never find the Lost Ones? That there is no God? She brought her glance down to the ring of faces. "We must wait here. There will be a visitor." Visitor. Synya shook her head. *I use the word for Kadnu's Sparks that streak the sky because we have no word else to name them.* She again dug her claws into her haunches. *But the streaks are but stones that burn in our air. And they . . . they are not stones.*

Morah snorted and shook his head. "Synya, no one reveres Kadnu's visitors more than I, but is this why we are called? Can we not watch the visitor from the snowfields at the backs of our own vines?"

Synya took a deep breath and snorted steam from her nostrils. She closed her eyes. "The visitor, Morah, is not from Kadnu. The visitor will only be seen here."

Morah opened his fanged mouth in surprise. "Have you—has your sign-reader seen a vision? Do the Lost Ones—"

"Silence!" Synya turned toward Shadig and held out her left arm toward Morah. "You speak now, Shadig! Tell them of the visitor not from Kadnu!"

Shadig glanced at Synya, then returned his gaze toward the snow. "Morah, the sign-readers did not see this . . . this visitor, nor its purpose. I, Synya, and Neest met here long ago to plot the rooting of our respective vines. It was then that we saw the . . . visitor." Shadig covered his eyes and mouth; still all heard him whimper.

Morah stood erect. "Say this, Shadig! What do you struggle to keep from us?"

Shadig only shook his head. Synya looked at Neest, but the vine-master's gaze was frozen to the snow. Synya turned toward Morah. "The visitor told us to gather all of the vine-masters here to meet twenty-seven growths from the visitor's departure. This is the end of the twenty-seventh growth."

Morah expelled the air from his mouth and wrinkled his upper lip into a sneer. "Pah! And how would this visitor know where the vines would be within twenty-seven growths? We do not even know this for five growths. To plot that far toward Kadnu would anger God and death-burn those foolish enough to approach so close. Tell us, Synya, how would this visitor know?"

Synya nodded slowly. "The visitor knows." *Those lights, those slivers of metal, those pale traces on shiny sheets of warm ice . . . the thing that took the three of us away from the ground to show us the Endless Trail to be a ball floating in nothing . . .* "Morah, the visitor

knows. I cannot explain how because I do not know the method. I do know we must wait."

Morah looked around the circle of vine-masters. "I have come a long way. For that reason I shall wait." He looked at Synya. "For a while." He held out his hands. "But I shall not wait squatting in the snow. I go to my hut!" He turned and left the circle. One by one the others stood and moved toward their vine-bark huts until only Synya, Shadig, and Neest remained.

Shadig turned toward Synya. "Why did you not tell them?"

Synya tensed her arm muscles, restraining them from bringing her clawed hand across Shadig's mouth. *"You were there too, Shadig! You could have told them!"*

Shadig hissed, moving into a half-crouch. "It is you who should have told them! You are the oldest!"

Neest stood erect. "We all saw the same things and none of us told of the things we saw and for the same reason." She turned and looked toward Kadnu's fading light. "They would have done what we would have done in their places. They would have taken us for mad." She looked down at Shadig and Synya. "Or blasphemers." Neest turned and walked toward her hut. Shadig stood, turned, then left Synya alone in the snow.

Synya looked again at Kadnu's Sparks. *If you were but sparks . . .* Two visitors in rapid succession left brief streaks across the sky. Synya looked down at the snow. *Stones burning in air.* She stood, turned, and moved toward her hut.

The ice wind carried the roar of the visitor to Synya's ears. She could hear the shouts of the other vine-masters and the soft padding of their running feet through the snow. She did not move, but instead kept her gaze fixed on the deep pink of Kadnu's glow as the pale light entered the open end of her hut. The roar of the visitor was a familiar one. The light at the open end of her hut was blocked by a dark, hulking figure. It was Morah. "The visitor has come, Synya!"

She lowered her head. "It is as we told you."

"Then, come! It is you who called us. Do you not wish to hear the visitor's message?"

Synya looked up at the darkness of the figure blocking her doorway. "I have heard the visitor's message, Morah. Now it is your turn." Morah paused for a moment, then turned and ran toward the sounds of the other vine-masters. Synya picked at her clawed toes for a few moments, then crawled from her hut. She stood and turned in the direction of the chattering to see the vine-masters standing

a respectful distance away from the visitor. It was a blue-and-white-colored container supported by five telescoped legs. It was at least a growth long—much larger than the earlier visitor—and its top and sides bristled with points, lumps, and whirling things in clear bubbles. From beneath it came bright white lightning and great billows of steam.

Synya felt a clawed hand on her left arm, and she turned to see Shadig looking into her eyes. *"These growths, Synya. All these growths! I prayed that the thing we saw was a dream; that the visitor would not return. I . . . prayed! To Kadnu, I begged!"*

Synya pulled her arm free and snorted. "You would pray to a ball of burning air?" She cocked her head toward the circle of vine-masters gathered around the strange craft. "Come, Shadig. Let us meet our future."

When they joined the circle, Synya saw that Neest was already there, squatting in the snow while the others stood. Neest glanced at her and Shadig, then returned her gaze to the craft. Out of the steam walked four beings talking the strange yodel of the things called "humans." Their skins were green, with black fur around their faces; but they were different from the other ones. The tall muscular one beat his hands against his arms. "By the beard of the Prophet, Miklynn, your big mouth's gotten us stuck in some pits before—"

"How would you like to pick your teeth out of those pits, Assir?" The speaker was not as tall as the other, but he was fat and talked with authority. Following them were two others, both slender, one a head taller than the other. The fat one motioned behind and the short, slender one moved up to his side.

"What is it, Red?"

The fat one pointed at the circle of vine-masters. "Tell these creepy-looking things we're ready." The fat one looked around, pulled a smoking stick from his mouth, then frowned at the short, slender one. "Dean, where in the hell are the others? We're supposed to pull the whole damned population off this rock. There can't be but thirty or so here."

The slender one looked at the circle of vine-masters, then he spoke in the sounds and words of the vine people. *"Are the ones named Synya, Shadig, and Neest among you?"*

Synya stepped through the circle and stopped a short leap before the speaker. Shadig and Neest joined her. *"I am Synya."* She moved her clawed hand from her breast, then indicated her two companions. *"Shadig, Neest."*

"I am called Dean." Dean pointed at the fat one. *"This one is our master and he is called Red Miklynn."*

A growl of anger erupted from the circle. The fat one slapped Dean on the arm and shouted at him. "What in the hell did you say?" He pulled the smoking stick from his mouth and threw it down to the snow. "Dammit! I knew I should've pulled Jerzi out of that funny farm. Helluva communications man you make, Dean—"

The one called Dean wrinkled his face and bared his small teeth. "Look, fatty, I told you to—"

Synya stepped forward. *"Dean."*

Dean looked at her. *"I am Dean."*

"Dean, you called this other 'Red'." Synya pointed at the dying glow of Kadnu. *"This is one of the names of our God. It is one of his many colors."*

Dean nodded, then pointed at the fat one. *"This one needs only to be called 'Miklynn.' I meant no disrespect."*

The vine-masters nodded, then the fat one poked Dean in the arm. "Well? Where's the rest of them?"

Dean turned back to Synya. *"We were told by the others who came before us that all of the vine people would be ready by the twenty-seventh growth. Where are they?*

Synya held out both of her arms indicating the others of her kind surrounding the four humans. *"We are all that can come. These are the masters of their respective vines."*

Dean frowned. *"The vine people do not know?"*

"We could not tell them. They would not believe."

Dean looked around the circle of vine-masters, then brought his gaze to a halt on Synya. *"What about the other vine-masters?"*

Synya shook her grey mane. *"None of them have been told. You must show them."*

Dean turned toward the fat one called Miklynn. "Red, we got troubles."

Miklynn grimaced and nodded. "It figures. It's not bad enough to get stuck with a farming job. We have to do one on Gaum's trouble-shooting and followups."

The one called Assir snorted. "Miklynn, if you'd keep your big mouth shut, Gaum would be farming and we'd be troubleshooting."

Miklynn held up his hand. "All right! You've worked your jaw enough for one day, Assir. Unless you want it wired shut, button it up!" He turned toward Dean. "What's the trouble?"

"Red, these are just the vine-masters. The people haven't been told. In fact, neither have the vine-masters. This one," he pointed

toward Synya, "says that you'll have to take the other vine-masters up and show them. Otherwise they won't believe."

Miklynn raised an eyebrow, then looked around the circle. "A joy ride." He looked back at Dean. "I count around thirty. Where are the rest of the vine-masters?"

Dean looked around the circle, then faced Synya. *"I see only half of the vine-masters. We know there to be over sixty vines—"*

Snorts and hisses greeted Dean's remarks until Synya held up her hands for quiet. When all was silent, except the wind, Synya looked at Dean. *"These are all the vine-masters."*

Dean looked at the fat one. "Red, she says this is it; there ain't no more."

Miklynn rubbed his shin, then kicked snow from his right boot. "Do these characters follow the sun or the ice?"

Dean looked around the circle. *"How many of you follow Kadnu?"*

Shadig snorted. *"All of us follow Kadnu. If we did not the ice would destroy us."* Shadig scooped up a handful of snow and flung it into the air to punctuate his observation.

Dean turned toward Miklynn. "Red, these guys are only the vine-masters from this side of the habitable belt. There's no one from the opposite side of the ring."

Miklynn nodded. "Gaum must've spent all of ten minutes trouble-shooting this rock."

Dean shrugged. "Should I ask them why the other vine-masters aren't here?"

The fat one looked around the circle, then turned toward the tall, slender one standing behind him. "Parks, do you think that these people even know about the population on the other side of this planet?"

The one called Parks moved up and stood between Dean and the fat one. He looked at Dean. "Ask them . . . ask them if they have a legend about . . . about a missing population."

Dean turned toward Synya. *"Does your belief in Kadnu suggest . . . does it include a missing people?*

Synya's head snapped back as though it had been slapped. *"The Lost Ones. Dean, do you speak of the Lost Ones?"* Dean turned and nodded at Parks, then turned back to Synya.

"Synya, where are the Lost Ones?"

Synya held a clawed hand toward Kadnu's light. *"We know not, Dean. Kadnu will lead us to them."*

Dean turned toward Miklynn and raised his eyebrows. "Red, they don't even know about the others. A search for 'the Lost Ones' is

part of their belief."

Miklynn stomped around in a small circle for a few seconds, then stopped and poked Assir's chest with a gloved forefinger. "You take this mob up for the joy ride and put enough distance between you and that sun so they can tell it's just like any other star."

Assir heaved a sigh. "Red, that will take days—"

"But before you take off for the long ride, you hop on up to the base ship, grab another communications man, then pick up a few of those Lost Ones. Got me?"

Assir nodded. "Yeah . . . "

"And while you're at the base ship, send down enough rockhound teams in landers to recheck Gaum's data—ice-side and hot-side both."

"What?"

The fat one placed his fists on his hips. "If that idiot Gaum can miss half a planet's population, would you trust his seismic data? Before I plant eight hundred thrusters on this rock, I want to make certain we won't tear it apart." The fat one glowered at the one called Assir. "Move it!"

Assir shrugged, then turned toward the craft. Lifting his right hand, he waved the vine-masters to follow him. Dean looked around at the circle. *"You are to follow him into the craft. You will not be harmed."*

Synya noticed that all of the vine-masters were looking at her. *"The visitor has something to show you . . . something you must know. Shadig, Neest, and I have already seen it."*

Morah looked at the snow for a second, then turned and faced Synya. *"If this is a good thing we shall see, are you not coming with us?"*

Synya shook her mane. *"The goodness of the thing is not for me to judge. I have seen it once, and that is enough."* The vine-masters continued to look at Synya. *"I am your senior, and I tell you to go! This is what you have traveled so far to see. You must see this!"*

Shadig looked toward the craft, then looked at Synya. *"I will go. For me . . . I must see it again. I . . . "* He turned and began moving toward the craft. Neest watched Shadig, then looked at Synya and nodded. Neest turned toward the craft and one by one the remaining vine-masters followed.

The one called Dean looked at Synya standing alone in the snow. *"Will you go with them?"*

"Pah!" Synya's long arms swiped at the icy air. *"My eyes have spoken once to me. I listened then!"*

Miklynn walked up to Synya and studied her, as she studied him. She had height and strength, but the fat one brought the terrible future. He turned to the one called Dean. "What's the chatter about?"

Dean shrugged. "She's seen the Terraform Corps' act before. She doesn't want a rerun."

The fat one looked back at Synya. "Ask her where she will go now."

"Synya, where do you go?"

Synya turned toward Kadnu's light and held out a clawed hand. *"I go to tend my vine."* She lowered her hand and looked from Miklynn to Dean, then to the remaining human. *"What is this one called?"*

Dean looked at the tall slender one, then turned back to Synya. *"He is called Parks. He is our . . . "* The one called Dean seemed to search for his words. *"Parks advises us . . . on matters . . . "* Dean looked at Parks. "Parks, I don't have any way to describe a social structural engineer with the vocabulary Gaum's communications man stuffed into the computer."

The one called Parks looked at Dean, then shook his head. "I don't speak the language."

"Give me some other description—some other words."

Parks scratched his chin with a gloved finger, then shrugged. "Beliefs, customs, historical trends, organization?"

Dean held up a hand toward Parks, then turned toward Synya. *"The one called Parks advises us on matters of faith, tradition . . . ritual—"*

Synya's grey mane came up sharply. *"Parks, then, is your sign-reader?"*

Dean shook his head and turned to Parks. "She doesn't understand. She thinks you're a 'sign-reader.' That's their name for a witch doctor, seer, priest, or whatever."

The one called Parks appeared to laugh within himself. But his eyes held none of this laughter. "That's close enough, Dean." He nodded, then looked at Synya. "I used to be a chaplain." He returned his glance to the one called Dean. "Go ahead. Tell her that I am a sign-reader."

Dean frowned and looked at the fat one. Miklynn waved an impatient hand. "I don't give a damn."

Dean pursed his lips, then addressed Synya. *"The one called Parks is our sign-reader."*

Synya moved toward Parks and studied his face. *"He has the eyes*

of a sign-reader. Strange eyes. But those of a sign-reader."

Dean turned toward Parks. "You've passed inspection—"

Synya leaped backwards as a beeping noise came from the fat one's belly. The fat one pulled a dark object from his belly and spoke to it. "What?"

"Miklynn, we're ready. Are you clowns coming?" Synya recognized the distorted voice of the one called Assir.

The fat one thumbed the object. "Keep your turban on." He turned toward Dean. "Is your little chit-chat over?"

Parks shook his head. "Wait, Red."

"Wait for what?"

Parks rubbed his chin, looked at Synya, then back at the fat one. "Look, Gaum has screwed up everything else. We ought to check his data on social structures."

The fat one appeared angry. "Parks, I don't give a damn if they know which fork to use—or even if they know what a damned fork is. All I want to do is get this job over and done with as fast as possible."

Parks walked over and poked the fat one in the chest. "Well, Red, what if they don't want to leave? What if, instead of calmly boarding the landers, they decide to stay? For all we know from the job that Gaum did, these people could be planning to wage war on us."

The fat one looked down at the finger stabbing at his chest. "You want to keep that finger?" The stabbing stopped and Parks folded his arms across his chest. Miklynn turned toward Synya, glanced at Dean, then spoke at the object in his hand. "Assir, dump out three K-packs and let us get clear before you take off. We'll be here on the skin for awhile." The object clicked and the fat one replaced it on the strap around his belly. As the one called Parks ran toward the craft to pick up the packs, the fat one looked at Dean and pointed a finger at Synya. "Tell her we're coming along."

Dean faced Synya. *"The fat one asks if we may go with you to see your people."*

Synya looked from Dean to Miklynn. *"Will the sign-reader called Parks come with you?"*

"Yes. It was his request."

Synya looked back at Dean. *"Then you may come. I would have your sign-reader observe what is, then consider what is to be."*

Dean looked at Miklynn. "She says it's okay." Dean pointed a thumb toward the craft. "Why the K-packs? Why not use a cart?"

The fat one pointed at Dean's feet. "See those?"

"What about them?"

"That's locomotion on this planet, dirtbrain. All we need is to come roaring up to her tribe in a cart to scare the living daylights out of them."

Dean fluttered his eyelashes and held his head to one side. "Why, you old softie."

"Dean, how would you like me to rip off your lips?"

Parks ran up, distributed the packs, and while the humans put them on, Synya looked toward Kadnu's light. *Does being a ball of fire, does knowing what you are, make you not a god?* She looked down at the snow, knowing but refusing to recognize the answer.

"Let's move out." It was the voice of the fat one.

Synya looked at Dean. *"We are ready, Synya."*

She walked a few paces to a mound of snow, reached under it and lifted her hut. She shook the snow from it, rolled the vine bark and tied it with woven strands of softened fiber, then slung the roll across her back. She faced the three humans, then turned toward Kadnu and began walking.

Synya set a strong pace toward Kadnu, the three humans half-walking, half-running to keep up with her. Each time she looked over her shoulder, however, the fat one was only a short leap behind while Dean and Parks fell further and further back. Synya increased her pace to a comfortable run, then looked back again. Dean and Parks were left far behind, but the fat one remained but a short leap back, his face reddening, his stubby legs pumping against the thinning snow. Synya frowned, then turned her face toward the light and ran as though the ice scavengers had picked up her scent. She maintained her speed until she felt the sting of the cold air in her lung. She slowed to a walk, then stopped and looked back. The fat one, streams of wetness on his face, stood a short leap behind her, sucking and blowing at the air. The others were lost over the horizon. "Wha . . . " The fat one gulped more air. "What's the . . . matter, you . . . creep? Can't run any . . . faster'n that?"

Synya frowned, then hissed and clicked at the human. *"Your legs . . . not made for running. Mine are. Why . . . do you try and prove differently?"*

The fat one pointed at the right side of his head. "I don't . . . speak the lingo." He pointed toward Kadnu. "If you are all . . . rested up, then let's get going."

Synya pointed at her own head and pointed away from the light. *"Wait for Parks and Dean. Our tracks . . . covered soon by the wind."*

The fat one nodded. "Parks . . . Dean." He pointed at the snow.

"Wait for them?"

Synya nodded, then looked with surprise as the fat one fell as a stiff branch to the snow, apparently asleep. Synya, still breathing hard, squatted next to the human. *I envy you your ability to sleep, fat one. My sleeps have been too troubled.* Synya looked away from the light to see two dark specks against the white of the snow. She studied them until she was certain they were not scavengers but the remaining two humans. She looked back at the fat one and jabbed his arm with her clawed fingers. He did not open his eyes. *"You must not sleep so soundly on the snow, fat one. You must be on guard against the cold and the ice scavengers."*

The human did not stir except for the heaving of his chest. Synya unslung her hut roll and busied herself putting up her shelter. When she was finished, she squatted in it and watched the human until his two companions arrived. Parks slung down his pack and rushed to the fat one's side while Dean squatted in front of the opening to Synya's hut. *"Synya, what happened?"*

"The fat one and I moved too fast for you and Parks. We decided to wait here for you." Synya looked down at the snow, then back at Dean. *"Why could the fat one run with me when you and your sign-reader could not?"*

Dean looked over his shoulder. "Parks, how's Red doing?"

Parks stood, picked up his pack and began opening it. "He's out cold. And I do mean o-u-t out. We better get him into a shelter."

Dean looked back at Synya. *"The fat one has things to prove to himself that the sign-reader and I do not."* Dean chuckled. *"It's a good thing that you did not challenge the fat one to a fang-growing contest."*

Synya's forehead wrinkled in confusion as she observed Dean's short flat teeth, then licked her tongue over her set of tearing teeth. *"Surely the fat one would lose such a contest."*

Dean stood and unslung his pack. *"No, Synya. Miklynn would probably win, but it would be . . . "* Dean frowned as he searched for an expression, then he shrugged. *"It would not be good for his gums."*

Synya watched as Dean and Parks erected a shelter of fabric, then pulled the fat one inside. She curled herself into a ball, her sensitive ears searching for threatening sounds, and began to doze. She licked again at her fangs, then tried to imagine the fat one with a similar set. *I must have not understood the one called Dean.* She sighed. *Words can be so mysterious.*

Synya awakened with a start as her ears picked up noises her

instincts said should not be there. Her ears altered direction until she identified the curious yodel of humans speaking. To be certain of their safety, she moved from her hut, walked around the two shelters, sniffed at the air, then returned to her hut. She again curled into a ball, letting the soothing human voices calm her.

"Red, you are about the stupidest sonofabitch I ever met."

"Parks, you and me don't go back *that* far. How about I feed you a few knuckles?"

"You tell him, Dean."

"Yeah, Dean. You tell me."

"I'm not an authority, Red."

"What's that supposed to mean?"

"I don't know how many stupid sons of bitches Parks has met. I bet you're way up there, though."

"You little schoolboy snot, I ought—Parks, are you getting your jollies or something? You want to quit feeling up my leg?"

"Red, unless we get your circulation going, you can kiss these lovely little stems of yours good-by."

"The joy juice'll do that."

"I'm just helping it along. Why don't you try and get some sleep?"

"Hah! Wouldn't you just like that? Get me while I'm asleep—"

"Dean. Hit him with another shot. I'm tired of listening to him."

"Dean, you squirt me with anymore of that . . . stuff. You crummy . . . little . . . sonof . . . abitch . . . " The voice of the fat one died away.

"What's his temperature?" The voice of the one called Parks had concern in it.

"It's up. Stick the heat sheet over him and I think he'll be okay." Synya heard fabric being spread, then the voice of the one called Dean. "I'll stand first watch over him."

"Okay. Dean, lend me your language chip."

"Why?"

"If I'm going to be a sign-reader, I think it would help if I knew the language. It's all right; I'm adapted."

"Even so, you can't learn it in just a few hours. It took me four straight days."

"I'll learn what I can, when I can . . . "

Synya dozed, her ears standing her own watch.

. . . The one called Gaum had pointed at the view of the great ball, half-shrouded in darkness. Synya looked with horror at the thin band between the light and the dark—a narrow thread of life in the midst of so much death by ice, death by fire. As the craft swung

around the great ball, Synya saw the lopsided mound of ice. It extended toward Kadnu farther than any of the vines; but farther than that, extended a great body of water. At the edge of the water, where once again the soil could be seen, the water steamed. The one called Gaum had said that the ice, water, and hot desert were the things that had kept the vines and the vine people from crossing over to the world where one must flee Kadnu, instead of follow him. But the one called Gaum had never spoken about the Lost Ones. . . .

She brought her eyes open as her ears heard feet in the snow. Through the open end of her hut she saw the fat one standing, looking at Kadnu's light. He reached to his neck with his right hand, unsealed his green skin, then took something from within it and stuck the stick-like object into his mouth. He resealed his skin, then brought his hands around the stick. Smoke erupted from his hands; and when he brought his hands away, the end of the stick glowed. The fat one sucked on the stick, letting the wind from the ice carry the smoke toward Kadnu.

Synya crawled from her hut, walked over to Miklynn, then squatted beside him. She pointed a clawed finger at the thing in Miklynn's mouth. *"Fat one, what is this for?"*

Miklynn pulled the object from his mouth and looked at Synya. "So, you're finally up. Thought you'd sleep forever." She jabbed her finger at the smoking stick. The fat one looked at it. "This?" He held it out toward her. "Cigar. This is a cigar."

Synya frowned. "Che . . . che-gah. Che-gah?"

The fat one shrugged. "Close enough." He unsealed his skin, withdrew another stick, and held it out to her. "Want one?"

Synya frowned, then took the stick in her hands. It was soft—a roll of leaves. She held it to her nostrils and the bitter-sweet smell intrigued her. She placed one end into her mouth and pointed at the other. The fat one exposed his teeth in a smile, then brought a flame from his hand to the end of the stick. Synya sucked on the cigar as she had seen the fat one do, and delicious smoke filled her mouth. She opened her lips, letting the ice-wind carry away the smoke. She nodded her mane at the fat one. *"The burning-leaves taste good."*

The fat one nodded as if he understood, and resealed his skin. He puffed on his own stick of leaves; and Synya joined him, puffing the delicious smoke and looking at Kadnu's light.

"For crissake!" It was the voice of the one called Dean. "Parks, Red's teaching her how to smoke."

Synya looked over her shoulder to see Dean standing by the fabric shelter and the one called Parks emerging from it. Synya raised her clawed hand and delicately removed the cigar from her mouth. *"Dean, there is concern in your words."*

Parks stood, looked at the fat one's back, then shook his head. "Come on, Dean. Let's tear down the tent."

"But what about her health? What's one of Red's weeds going to do to her?"

Synya replaced the cigar between her thick lips and took another puff. Parks turned to the tent. "She seems to be handling it better than we do. Let's go with the tent." As Dean and Parks began repacking the shelter, Synya looked back toward Kadnu. She puffed again and watched the wind speed away the smoke. She turned her head toward the fat one and held out her cigar. "Che-gah."

The fat one puffed and nodded. "Put hair on your chest." He looked at Synya, observed the thick mat of hair on her chest, then shrugged and looked back toward Kadnu's light.

After a few moments, Dean and Parks walked up to them. They both wore their packs, and Dean carried the third. He held the pack toward the fat one. "Red, are you strong enough to carry this? Parks and I can switch off."

Synya saw the fat one's face grow angry as he turned and pulled the pack from Dean's hand. "After this job I'm going to throw you two smartmouths so deep in the stockade neither of you'll remember what sunlight is!"

As the fat one strapped on his pack, Synya turned toward Dean and removed the cigar from her mouth. *"Is the fat one angry with you?"*

Dean shook his head. *"It is only his manner."* Dean looked toward Kadnu's light, then looked at Synya, again puffing on her cigar. *"Synya, this time could you walk a slower pace?"*

"Did the fat one ask this?"

Dean glowered at the fat one for a moment, then returned his gaze to Synya. *"No, it is for the sign-reader and I. We cannot keep up."*

Synya nodded. *"If it is for you and the sign-reader, I will walk more slowly."*

Dean turned toward Miklynn. "Red, we're going to keep the pace down."

The fat one's eyebrows rose. "Oh? Did Synya find our last little run too fast?"

Dean sighed and shook his head. "No. I asked her to slow it down."

The fat one nodded, smiled around his cigar, then turned and faced Kadnu's light. He patted Synya on the back, then pointed with his thumb toward Dean and Parks. "I guess we better hold it down. Those two are a little out of shape." Synya nodded and the pair began walking toward the light.

Dean turned toward Parks as the two began following. "Dammit, but Red makes me mad! Another run like that would kill him."

Parks hunched up his pack and kept putting one foot in front of the other. "Dean, just be grateful that the wind is at our backs."

"Why?"

"The cigars."

Dean nodded, hunched up his own pack, and followed in silence.

By the end of the walking, the bright edge of Kadnu peered over the horizon, casting long shadows from the regular mounds of soil covering the severed root-ends of Ashah, Synya's vine. During the walk, she had noted the larger mounds, and had told the human sign-reader their significance: with the root-ends were also buried the dead of her vine. She taught the sign-reader, through Dean, how to read the shapes of the mounds to identify the dead. They passed Nogda, the old sign-reader who had foretold the poor rooting of the fourth growth; and Synya's father, Garif, who had been slain by the ice scavengers; and others.

As Synya curled to sleep inside her shelter, she again listened to the humans talk. Dean and Parks were practicing to speak the language of the vine people. The human sign-reader had difficulty forming the words correctly, but he knew them. The fat one spoke the yodel of the humans.

"You two've been hissing and clicking at each other for hours. You want to knock it off so I can get some sleep?" The practicing stopped. Only silence came from the human's shelter until, again, the fat one spoke. "Dean, you got that language chip on you?"

"What?" The one called Dean sounded astonished.

"Language chip, dirtbrain. You know what a language chip is—"

"Yeah, Red. I thought you said your skull was already too full of grunts and groans. Why the chip?"

"If I want you to know, I'll tell you. Maybe the next time I offer the lady a cigar I'll want to do so as a gentleman."

"I don't think the chip has a word for cigar, except weed that croaks—"

"Just hand me the chip, Dean. And if I want any wiseass remarks out of you, I'll stomp on your head'n squirt 'em out your ears."

Synya heard movement inside the shelter, then silence again. It was broken by Dean's voice. "Parks, what do you suppose he wants to talk to Synya for?"

"Maybe he's in love. Red's a haunch and claw man, you know."

Dean laughed. "Think you'll be best man?"

"No." Parks chuckled. "This love is destined to fail. She's too good for him."

Synya listened to the yodeling sounds, then drifted off to sleep, her ears standing guard.

The next three walks brought Kadnu into full view, the only remaining snow, mere patches hiding in the mound shadows. As they stopped to rest at the end of the walk, Dean and Parks set to the job of erecting their shelter while clouds crossed Kadnu's face, bringing with them a light rain. Synya completed her shelter, then walked to where the fat one was squatting on the bare soil. She could see where he had scooped up a handful of the soil. The fat one was letting the soil trickle through his bare fingers as he studied the horizon. Synya squatted next to Miklynn.

"Upon what are you thinking, fat one?"

Miklynn frowned at Synya. *"I am called Miklynn."* He spoke the language of the vine people well. *"Do not call me fat one."*

Synya sat back on her haunches and studied him. The description bothered him. Why that was concerned only him. *"Miklynn."*

"Yes."

"Why do you feel the soil?"

The fat one pointed from left to right at the horizon. *"Look, Synya. How flat it is. There are no . . . "* Miklynn frowned, trying to find the words. *"There are no large mounds as there are on many other worlds. The soil is rich and fine-grained."* He held out a small, flat object. *"This is the largest stone I have found. The visitor Gaum explained* farming *to you?'*

Synya nodded her mane. *"The planting, the harvesting, and much more."* She looked down at the soil and clawed at it.

"Synya, after we have done our work, this world will farm. This soil can grow things almost from pole to pole. Do you understand?"

Synya sighed. *"Gaum explained these things. He showed us with his magic ice pictures."*

Miklynn studied the horizon, then scooped up another handful of soil. *"Synya, just think of the farm this world would be."*

Synya looked at the handful of soil she had clawed from the surface. *"I have thought upon it, Miklynn. For many growths, I have*

thought of little else."

Miklynn stood, his glance still surveying the horizon. *"Synya, do not misunderstand me. This is not my kind of work. But, still, there is something to be accomplished here. This world will produce food—many kinds of food—for many kinds of worlds."*

With a claw extended from her left hand, she pushed about the small mound of soil she held. *"This is why you come to do this to us?"*

The fat one looked down upon her, the space above and between his eyes wrinkled. *"Do to you?"*

"Your people will arrive at some gain by changing my world?"

The fat one moved his shoulders. *"Yes. But so will the vine people. That is why the . . .* big shots, the Quadrant *. . . why others have committed great . . . "* The fat one shook his head. "You don't have a word for wealth, the big credit." He rubbed his chin. *"That is why others have committed a lot to this work. Both your people and mine will arrive at gains."* The fat one nodded his head. *"As I said, it is not my kind of work, but just think of what this world can be."*

Synya knocked the soil from her claws, then stood. *"I have thought on it, Miklynn."* She looked at Kadnu, hanging low above the horizon. Kadnu would not be followed, for he would travel too fast—no, the . . . ball would spin too fast. It would melt the ice, warm the cold, and cool the hot. There would be no need to follow Kadnu. The vine people could stop their endless walk. Synya shook her mane. *"I . . . I have thought on it, Miklynn. I am grateful that my death will come first."* She turned and went to her shelter. Miklynn studied her back until she disappeared inside.

Synya listened to the soothing yodel of the humans as she curled and tried to sleep. Thoughts of Kadnu flying across the sky too fast for her to chase were thoughts she drove from her mind by concentrating on the human talk coming from their shelter.

"Dean?"

"Yeah, Red?"

"Who was the commo man with Gaum?"

"Keffer. Sheena Keffer. I don't know her. Why?"

The fat one was silent for a while. "I talked to Synya about increasing the rotation on this planet, about how it could be farmed . . . she didn't exactly jump for joy. You think this Keffer screwed up?"

"Screwed up how?"

The fat one paused. "She as much as told me she'd rather be dead

than see it."

"Keffer's job was to get the words, meanings, grammar, and contexts down. She's done that all right as far as I can see."

"Why didn't the original three vine-masters tell their people? Gaum's group must have scared the hell out of them."

Parks laughed. "No, Red. Look at it from Synya's point of view. The universe is a long road extending to infinity. The road is lighted by Kadnu, their god. Kadnu leads them along the road and draws their life-sustaining vines along with them. He gives them water, warms them, and is always there. Synya's god has never failed her or her people."

Dean snorted. "Which is more than you can say for most of the gods we've come across."

"So what, Parks? The Corps has shown Synya the truth about her road, but it showed her how we will turn this rock into a garden."

"A garden." The one called Parks was silent a long time. When he again talked there was a strangeness in his voice. "Red, when Gaum took Synya and her two buddies on the grand tour, they weren't just shown that Santa Claus and the Easter Bunny are myths. They didn't only have their concept of Kadnu the god blown up in their faces—they had everything that they *know to be true* turned over, shook up, and flung out into space. Their universe has been destroyed, Red, and you wonder why a couple of plows and a manure spreader don't seem to compensate them for it."

The fat one laughed. "Careful, Parks. Keep it up and the Corps will have you back in your chaplain's collar."

"Why don't you just shut the hell up?"

The fat one was silent for a moment. "Dean, what put a wild hair up Parks's—"

"Shut up, Red. We can all use some sleep."

Silence came from the humans' shelter. After a long while, the fat one emerged from the entrance shouldering his pack. He stood looking at Kadnu for a moment, then began walking toward the light. Synya watched Miklynn march toward the light until she dozed. There would be no danger from the scavengers this close to Kadnu. The fat one would be safe.

At the end of the resting period the one called Miklynn had not returned. Synya and the two humans packed their shelters and continued toward the light without him. They walked in silence, reaching the short brown grasses, Kadnu growing ever higher above the horizon. The one called Dean yodeled the human speech at

Parks, then Synya spoke. *"We all speak the language of the vine people. Do you hide things from me?*

Parks shook his head. *"Dean was asking me about Miklynn; if we should be concerned."*

Synya looked at the one called Dean and saw no lie in his manner. *"Parks, then should you be concerned?"*

"No. Miklynn does as he wants when he wants."

Synya nodded. *"Then he has no fear."*

Parks studied the ground as he walked. He glanced up at Kadnu, then returned his gaze to the ground. *"We all have fears, Synya. Even Miklynn. Even you. Is this not true?"*

Synya and the others walked in silence. As they approached the place where green blades appeared among the brown grass, she turned toward Parks. *"You asked about my fears, sign-reader. All my fears have been brought by the humans. Before the one called Gaum came, one only needed to follow Kadnu and serve Ashah, our vine, as it followed Kadnu."*

Parks frowned. *"You do not fear your god?"*

"Pah!" Synya swiped at the grass with her claws. *"The one called Gaum showed us the 'god' to be nothing but fire! We cook with fire! Fire serves us; we do not serve fire! What is there to fear, sign-reader?"*

Parks nodded, then faced Synya. *"Before Gaum came—did you fear Kadnu then?"*

Synya thought back. *"No . . . no, sign-reader. Before Gaum came we did not fear Kadnu. The light showed us the way to life. It fed and watered Ashah, it warmed our births, and watched as we danced. You do not fear such a thing; you love it."* Synya choked as she suppressed a cry. *"But that was before Gaum came."*

Parks nodded, glanced at Kadnu, then studied the mounds of still fresh soil. *"Synya, what is death to the vine people—what was it before Gaum came?"*

"In death we served Ashah and were reborn with the Lost Ones." She waved her clawed hand at the nearest mound. *"Now, what is it? Burial next to a root? The end of life?"*

The one called Dean slapped Parks's arm and pointed toward the horizon. "Look." Dean faced Synya. *"What is that?"*

Synya narrowed her eyes and studied the horizon. Directly beneath Kadnu there was a distinct bump marring the otherwise featureless surface. *"It is Ashah. The vine my people tend."* Synya stopped and looked from the light, back toward the snow they had left behind. Regular mounds of soil reached to the horizon. Above, the sky was dark blue. Kadnu's light had drowned even the brightest

of his sparks. *"To my eyes, sign-reader, it is as it always has been."* She dug her claws into her breast. *"But to this—here inside of me—to this nothing is the same! What is this pain inside of me, sign-reader? Name it!"*

Parks studied Synya, then turned away as she looked at him. Before he turned, Synya had seen wetness in his eyes. *"I have no name, Synya. But I know the pain. I know it . . . very well."*

Parks resumed walking toward Kadnu. Synya saw Dean standing, watching Parks. Dean's brow was furrowed. *"Dean, what is this I see on your face? Anger?"*

Dean turned toward Synya, then shook his head. *"No, Synya. Doubt—confusion."* The one called Dean looked at the back of the other human. *"There is much we humans do not know . . . about each other."* Dean began following Parks while Synya looked from one to the other. She held out her arms, extended her claws, and roared at Parks's retreating back. *"You know this pain, sign-reader! Is what you bring us worth this pain? Tell me!"*

Parks continued walking, not turning back, and not answering.

At the end of the walking period, they erected their shelters a few long leaps from the end of Ashah, the vine of Synya's people. Dean erected the fabric tent for the humans while the one called Parks sat cross-legged, studying the activity at the end of the vine. With their sharp claws, the vine people were stripping finger-thick sections of bark from the plant, while others cut free sections of the huge stem's meaty interior. The strips of bark were handed down to others who would arrange them into close fitting rows, which would then be spread with the thick sap of Ashah gathered by others. Synya talked among the workers for a long while, then returned to the two humans and squatted next to Parks. With her she held in her hands a piece of the vine's interior. She tore off a small portion and handed it to Parks. He took it, smelled it, then bit into it, and chewed. *"It is good, Synya—sweet. But does it spoil? How are the others tending the length of the vine fed?"*

Synya waved a clawed hand at the air as she talked around a mouthful of food. *"It is still cold at this end of Ashah. The sections that are being cut free will soon be crust-covered. That protects the food as it is carried forward."*

Parks nodded. *"The vine-water dries in the air."* He felt the stickiness on his fingers, then pointed at the workers laying the strips of bark and spreading them with the sap. *"I see how your shelters are made. But is that one so large for a reason?"*

Synya shook her mane. *"It was the fat one who told them to build it."*

The one called Dean walked up and joined them, squatting on the short, green grass. "Did she say Miklynn's been by here?"

Parks nodded, then pointed at the workers. *"Miklynn told them to build something."* He turned to Synya. *"Did they say the purpose?"*

Synya shook her mane and handed Dean a piece of vine meat. Dean bit into it and raised his eyebrows. *"This is good."*

"It is the body of Ashah. It could be nothing else."

Dean nodded and looked at Parks. *"What is Miklynn up to?"*

"I do not know. Synya, did they say where the fat one went?"

"Only that they saw him continue toward Kadnu. They had many questions about the fat one. Many questions."

Parks smiled. *"And what did you tell them?"*

"That you are the sign-reader of the humans, and that you will answer their questions in due time."

Parks snorted, then looked at Dean. Dean only shook his head. Parks returned his glance to Ashah and the workers. *"The one thing I can never do is try to explain Miklynn."* He looked at Synya. *"Is your sign-reader near?"*

Synya pointed at one of the workers high atop the body of the great vine. *"Volyan. My grandson. He is one of our seven sign-readers."*

Dean began shaking as his face turned red. Synya frowned at him. *"Are you not well, Dean?"*

Dean nodded, laughed, then gasped for air. *"I cannot wait to tell Miklynn that his footrace was with a grandmother."*

Synya tossed back her mane. *"But I am not merely a grandmother."* Dean frowned, and Synya continued. *"Volyan's children are all mated, and each of the unions have been blessed by Kadnu with babes. All of them are now grown, have mated—"* Dean fell backwards, laughing uncontrollably. Synya turned toward Parks to ask the reason; but the sign-reader, too, was fighting for air to feed his laughter.

Later, inside the humans' shelter, Volyan joined Synya and the two humans. Volyan's mane was grey but streaked with brown. He pointed at Parks. *"What is the purpose of the large shelter with the strange design the fat one told us to build?"*

Parks shook his head. *"I do not know."*

Volyan pointed at Parks's belt. *"I know you can talk to the fat one if you choose. I saw him use such a thing to talk to creatures in a*

great craft, high in Kadnu's light."

Parks pulled the communicator from his belt, studied it, then replaced it. *"If Miklynn wishes to talk with me, he will call."*

Dean pulled out his own communicator. "Well, I'll ask him if you won't. Damned if I know what it is." Dean pressed the object. He pressed it again.

"What?" Synya recognized Miklynn's voice.

"Red, we're at the end of the vine. What do you have these people doing?"

"I guess I was wrong, Dean. You are as stupid as you look." Dean's face flushed. The object spoke again. "Is Volyan there?" Dean held out the object toward Volyan and pointed at a small silver plate set in its surface. *"Speak in there."*

"Miklynn? This is Volyan."

"Do you still have that thing I left with you?"

Volyan nodded. *"I do."*

"Give it to Synya." The box remained silent for a moment, then spoke again. "Dean?"

Dean took the box from Volyan's hand. "Yeah, Red?"

"Don't call me anymore unless it's important, got me? That call signal liked to scared the crap outta the people I was talking with. Miklynn out."

Dean looked at Parks, shrugged, then looked at Volyan in time to see him hand Synya a cigar. "Oh, for crying out loud!"

Synya inserted the proper end into her mouth then pointed a clawed finger at the other end and spoke to Volyan. *"Fire."* As Volyan left the tent, Synya nodded at Parks and talked around her cigar. *"The fat one remembers. He thinks of me."*

Parks grimaced. *"Yes, Synya, the fat one is a regular . . .* sweetheart."

"This last word, sign-reader. What does it mean?"

Parks sighed. *"It means that such a person is . . . a polite and . . . loving—"* Parks turned toward Dean. "You're the communications expert. You tell her."

Dean rubbed his chin and smiled. "It is not for me to divine the cryptic meanings of your visions, sign-reader."

As the human sign-reader pointed at the portion of his body upon which he was sitting and yodeled in the human speech at Dean, Volyan entered the tent carrying a leaf from the vine. He squatted before Synya and opened the leaf. In its center was a bright, glowing coal. Synya touched the end of her cigar to it and puffed until the cigar was lit, filling the tent with the bitter-sweet smoke. At the

suggestion of the human sign-reader, they all moved outside of the tent to continue their discussion.

They sat on the grass outside of the tent facing each other. Volyan laid the coal and leaf on the ground between them, and Dean leaned forward and picked it up. *"Parks, I can hardly feel the heat of the coal through the leaf."*

Parks took the leaf from Dean, held it for a moment, then nodded. Synya pointed at the leaf. *"We must wear wraps made from Ashah's leaves to protect us against Kadnu's heat at the growth-end of the vine."*

Volyan looked at the two humans, then at Synya. He studied her for an instant, then looked at the burning coal. While the humans watched the end of Ashah, and as Synya puffed on her cigar, the look on Volyan's face grew more concerned. He turned to Synya. *"Synya, first this fat one, then these two others. Boxes that speak, huge crafts in the sky, you making smoke from a stick. My sign-reader's eyes do not see the meanings. I see change, but what will that change be?"*

Synya pulled the cigar from her mouth and hung her head as she closed her eyes. *"I almost forget, then I am reminded."*

Volyan saw the pain in Synya. *"Of what are you reminded?"*

She threw the cigar away and it hit the ground in a shower of sparks. *"There will be a change, Volyan—many changes."* She nodded her head at Parks. *"Their sign-reader should tell you instead of me."* She shook her mane. *"I cannot."*

Parks pulled a blade of grass from the ground, pulled it apart, then dropped the pieces back to the soil. *"How can I tell him, Synya, when neither you, Shadig, nor Neest could tell the peoples of your vines? You all said that you would not be believed."*

Volyan studied the human sign-reader, then studied Synya. *"I see the same pain in you both. Synya, after what I have seen, I am prepared for the unbelievable."* He reached out a clawed hand and placed it on Synya's arm. *"You are my grandmother and the master of my vine. I can see truth from lies in you; and if you say the one called Parks tells the truth, I will believe."*

Synya remained still for a long moment, then nodded at Parks. *"Tell Volyan what the other vine-masters are being shown."*

Parks licked his lips then turned toward Dean. "Get one of those weather balloons from the tent." Dean left and Parks looked at Volyan. *"The masters of all of the vines are being shown that Kadnu is a great ball of burning air. Then they will be taken far, far away from Kadnu to show them that . . . Kadnu is nothing more than one*

of many thousands of such burning balls. Those are the lights you call Kadnu's Sparks."

Dean returned and handed a small container to Parks. Volyan looked at Synya, then back to Parks. *"There is more, sign-reader. I see there is more."*

Parks nodded. *"Yes, Volyan. There is more."* Parks triggered the container and from its top emerged a white fabric that soon grew into a perfectly round ball. Half of the ball was lit by Kadnu; the other half was dark. Parks pointed at the ball. *"What you call the Endless Trail looks like this. It floats in space around Kadnu."*

Volyan sat back for a moment, turned and looked at Synya, then returned his gaze to the ball. *"And . . . and there is yet . . . more."*

Parks pointed at the line between the light and dark sides of the balloon. *"This is where the vine people live—where we are right now. The ball—it is called a* planet*—moves very slowly. Like this."* He held his finger on the ball and rotated it until his fingertip was in the dark. *"This is why Ashah and the vine people must move every growth, like this."* He moved his fingers from the dark back to the line without moving the ball.

Volyan stood, looked at Kadnu, then turned completely around, peering at the horizon. When he stopped, he was looking down at Synya. *"Grandmother . . . "*

Synya nodded, her eyes shut tightly. *"It is . . . it is true! It is true, but . . . there is still more!"*

Volyan remained standing, looking with astonishment from his grandmother to the human holding the ball. He squatted, and dug his claws into his haunches. *"Parks."*

Parks did not meet Volyan's glance. *"Yes, Volyan."*

"If . . . if what you say is true . . . and Synya says it is true. Synya says it is, and I see no lie in her. But if the Trail is a . . . ball, what of the Lost Ones? We will never catch the god and meet . . . the Lost Ones?"

"Look at the other side of the ball, Volyan."

Volyan stood and walked until he stopped beside Dean. Parks continued rotating the ball in the same direction. *"Just as your people must follow Kadnu, on the other side there are more people that must move from Kadnu. They follow the ice. I believe them to be the Lost Ones."*

Volyan swiped at the ball with his claws, exploding it. *"This . . . this, this thing you say . . . "* He looked at Synya. *"This cannot be true! Grandmother, this cannot be true!"*

Synya stood, pain and anger contorting her voice. *"You see no lie*

in me! It is true! My own eyes have seen this thing, and there is still more, Volyan! Still more! The humans have great machines that they will plant on this ball of ours! The machines will make the ball spin faster! So fast that our strongest runner could not keep up with Kadnu's pace! The ball will spin so fast that the ice will melt and the death-burn will cool!" She held out her arms. *"The entire ball will be much like it is here, right now."*

Volyan squatted and clawed at the green grass. *"But, Grandmother, why do they do this to us?"*

Synya squatted. *"We will grow things—food. More food than we can ever use. Then great crafts will come to take away the food and they will give us leaves for the food. With the leaves we can have others come to us and make us shelters of stone, teach us things . . . we will be . . . prosperous."*

Volyan rocked back and forth on his feet, digging at his haunches until he broke the thorny skin that covered them. *"I see, Grandmother. I see. And what shall the vine people do when the ball spins too fast to follow Kadnu, yet not fast enough to melt the ice?"*

Synya looked at Parks, then squatted. *"Tell him, sign-reader."*

Parks had his elbows resting on his knees, his face resting in the open palms of his hands. He shook his head. Dean looked at Synya, but talked to Volyan. *"The population will be removed from the planet until the proper rotation speed is achieved and the air masses have adjusted to the new surface temperatures. Right now the wind always comes from the cold side of the ball to the warm side, where it rises and returns to the cold side. In the centers of both the cold and hot sides, the air does not move. At the new speed, the coldest parts of the ball will be . . . at the top and bottom. The air will change. The wind will come from the top and bottom, meet in the middle where it will be warmest, then it will rise and return. This will cause terrible storms—"*

"Aaahh!" Volyan held his hands over his ears. When he let his hands fall, he looked at Synya. *"How long have you known?"*

"Twenty-seven growths."

Volyan looked at the grass before him. *"How could you keep this awful knowledge within yourself for so long . . . "* He turned to Dean. *"How long will we be away from . . . here?"*

Dean thought a moment. *"Between seventy and eighty growths."* He shrugged. *"Maybe more. It depends on many things."*

Volyan looked at Synya. *"You will be dead before you see this."*

Synya nodded, then looked at Dean. *"Ashah. What will happen to Ashah and all of the other vines?"*

Dean shrugged and shook his head. Parks lifted his face away from his hands and looked at Synya. *"They will die. They will all die."*

Synya looked at the human sign-reader's face. It was streaked with wetness. *"Parks, is there a chance that this will not happen?"*

Parks barked out a laugh. *"Not with the fat one in charge, Synya. Miklynn will see that the job is done. He has to."*

In her hut, Synya curled to sleep, rearranged her position, and curled again. The yodel of the nearby human voices, this time, was not soothing.

"Dean, I've been with Miklynn for too long. He doesn't like this job, but it's the job he's been given to do, and he will do it."

"Parks, if he doesn't like it . . . "

"The only reason he doesn't like it is because it's a post-followup operation—a milk run. He could care less about vines, vine people, or anything else. I know him. You don't."

"Parks, what if the people won't go? What can Red do about it?"

The one called Parks was silent for a moment. "Dean, you are stark-flapping out of your marbles if you're thinking of working against Red." He was silent for another moment. "What did you have in mind?"

"What about denouncing Red as a heretic?"

Parks laughed. "What about the vine-masters? Synya?"

"We can say . . . tricks were played on them. That what they saw was all lies. From Volyan's reaction, which do you think the vine people would *want* to believe?"

There was a long silence. "Two problems, Dean. The first one is that we would be part of this conspiracy. Second, have you seen the claws on those suckers? Besides, we'd be putting Red in danger." Parks sighed. "Anyway, if it wanted to, the Terraform Corps could probably get this population removed by force under the Savage Planet Regulations."

"Parks . . . we just can't go along with this."

"Of course we can. And we will. Read your enlistment papers sometime." Synya heard movement inside the humans' shelter. "That's it for me, Dean. I'm hitting the sack."

The humans were quiet for a long time, then the one called Dean emerged from the shelter and walked away from Kadnu for a long time. Still Synya's keen ears heard the beep of his talking box, then she heard Dean speak the human's yodel. "This is Dean. Put Arango on the horn."

Silence, then a strange voice. "Arango. What's up, Dean, and why are you on this frequency?"

"Because that's the frequency I picked, okay?"

The talking box was quiet for a moment. "What're you up to, Dean?"

"I want the data the orbiting station has on the other side of this planet."

The box was silent again. Then the strange voice spoke. "I shot down all that stuff to Red forty hours ago."

The one called Dean paused a moment. "So shoot it down to me. Parks and I haven't seen Miklynn for longer than that."

"Okay. You on record?"

"Yeah."

"Here it comes." Synya heard a series of squeaks and bips that lasted but a short breath. "That's it. Now, you want to tell me why you're on this frequency? Your team is supposed to be on channel eight."

"I just didn't want to wake up the others."

"Uh huh. You mean you don't want Red to find out."

"Maybe, Arango. Maybe."

"It better be, if you know what's good for you, Dean. Arango out."

Synya heard the talking box make a clicking sound, then it began to speak in a voice similar to the human yodel, but devoid of emotion or degrees of expression. She dozed and when she awoke, the flat yodeling still came from the box. Synya noted the shadows Ashah made by Kadnu's light. The shadows had moved a few grains. The human Parks would awaken soon, yet the one called Dean had listened to his talking box the entire time. She listened to the flat yodel a moment longer, then heard a click followed by a series of bips and squeaks. For a long while she heard nothing but the steady wind from the ice, then she heard Dean's boots grinding against the soil. He was walking even further from Kadnu's light. She heard him stop, then talk to himself. "Dammit. Aw, Goddammit all to hell." He was unmoving and quiet for a moment, then he shouted, "Parks!" He waited a moment, then shouted again, "Parks!"

Synya saw the other human emerge from the fabric shelter, sealing the top of his green skin. "Dean?" Parks looked toward the vine, shielding his eyes from Kadnu's light. "Dean, where are you?"

"Back here!"

Parks turned around and faced the darkness. "What is it?"

"Come here." Parks began walking away from the light. "It's Volyan. He's dead."

Synya stood between Dean and Parks as the three looked into the pit that had been dug, exposing one of Ashah's severed root ends. At the bottom of the pit, curled among the root branches, was the sign-reader, Volyan, his throat slashed with his own claws. The one called Parks turned toward Synya. *"I am pained at this, Synya. Believe me."*

Synya stared at the body of her grandson, then she squatted and began pushing the soil back into the pit with her hand. The two humans stood still for a moment, then began kicking the soil into the hole with their boots. Synya stopped and looked first at Dean, then at Parks. *"Do not use your feet. The soil must be replaced with the hands."* The humans paused, then knelt next to her and pushed in the soil with their hands. Synya returned to scooping the soil into the pit, wondering about the wetness on the faces of the humans.

When they were finished, the soil over the root end was mounded and smoothed. Synya gathered several pieces of vine bark and began pressing them into the mound as she talked. *"Volyan, sign-reader and son of my son, may you in death serve the Lost Ones as in life you served Ashah and its people."* Synya finished the vine-bark design on the mound: three horizontal pieces. She looked at the design. *"Will you serve them, Volyan? Will Kadnu ever shine upon you again?"* She shook her mane. *"How to feel?"*

She stood, the humans at her sides, then the one called Dean pointed at the design. *"Synya, what is the meaning of that mark?"*

Synya looked at the design. *"It represents the name of my grandson, Volyan."*

Dean nodded. *"Synya, I wish that we had not told him. I feel as though Parks and I killed him."*

Synya turned from the grave and began walking toward Kadnu. *"He would not have believed you except for me. We are equal in Volyan's death. With each other and with . . . truth."*

The two humans glanced at each other, then followed her.

The ice wind flew at their backs, bringing the rain as they walked past the vine people cutting the meat from Ashah, and the others still occupied with the fat one's project. The humans studied the thing Miklynn had instructed the vine people to build, but could not divine its purpose. Neither did those who worked on the project know its purpose. Synya had asked them why they worked so hard for an unknown objective at the instruction of a strange creature. They had answered that the fat one had a certain manner about him that left little room for objections, and he had said that Synya

would tell them to continue the construction when she again returned to Ashah. The ones called Parks and Dean had watched Synya's face as she thought for long moments. Then she had instructed her people to complete the fat one's assignment. Afterwards the three continued their journey toward Kadnu.

The three walked in silence, ignoring the food-burdened vine people passing them to bring the vine meat to others who would, in turn, pass the food forward to nourish those who tended the great vine. The one called Parks studied the twists and bends of the vine, the thick, curled roots leading from Ashah's massive body across the ground. The path they followed twisted with the vine as it kept near the body, allowing the heavy food traffic to pass beneath great loops under the vine or its gnarled roots. Ashah was leafed only along its root branches, and Parks could see where many of the leaves had been harvested. As they reached a great scar that encircled the body of Ashah, the thickness of the vine diminished, marking the beginning of the next growth. Beneath the scar, Synya led them from the main path to a smaller path following one of the great root branches. Smaller roots led from the branch to the ground, and Parks could see where clawed hands had dug channels from small pools of water to feed the roots. Huts, both large and small, were located near the branch, but none were occupied. Parks spoke to Synya, raising his voice against the sounds of the wind and rain. *"Synya, why have you taken us on this path?"*

Synya shook the water from her mane, then stopped and faced Parks. *"I must tell my son, Royah, of Volyan's death."* She held out a hand toward a cluster of huts near the end of the branch. *"It is not far."*

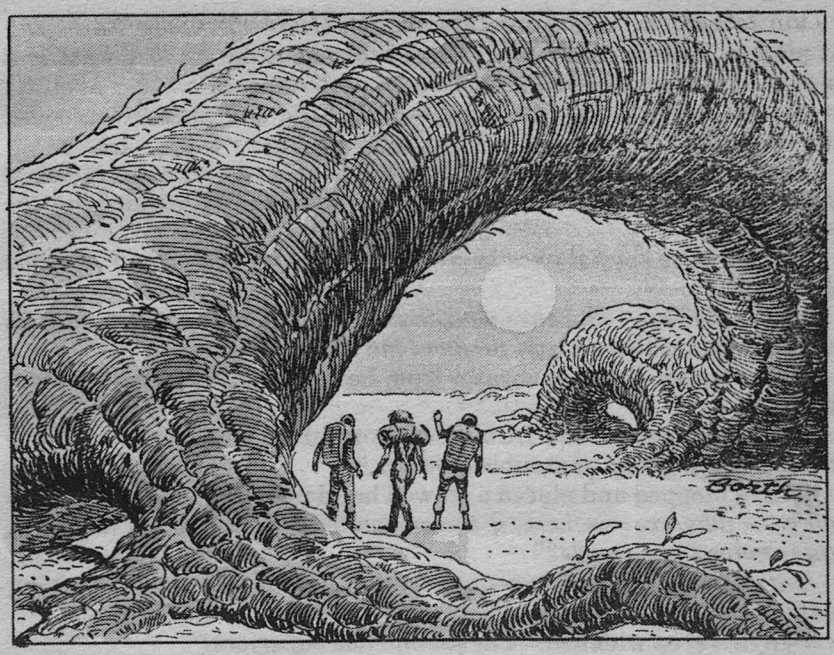
The one called Dean hunched his shoulders against the rain and began walking in the direction of the huts. Parks and Synya followed. Synya glanced at Parks's face, then looked toward the huts. *"There is a question on your face, sign-reader."*

Parks nodded. *"You read my face well."*

"You would ask why I told them to complete the fat one's assignment."

Parks nodded again. *"Yes. Miklynn and the rest of us are here to change everything that you and your people hold dear, yet you would do Miklynn's work for him. Why?"*

Synya walked in silence for long moments. *"Sign-reader, who is to say that the future you bring us is not better than the present we now occupy? This future is beyond my experience; beyond my wisdom. But the fat one knows."* She again shook the water from her mane.



"I must trust the fat one, whatever the purpose of the thing he told my people to build. I trust the fat one to do what is best for my people."

Parks bit his lip, then faced Synya. *"How can you be certain?"*

"I can be certain of nothing, sign-reader. Your people have shown me. All my certainties have been proven false. All that remains is trust." She looked at Parks. *"And I read a dislike of this task in the fat one's face."*

Parks laughed and wiped the water from his face with a gloved hand. *"You read his face with accuracy, Synya."* His face again grew somber. *"But you have read wrongly his motives."*

"Tell me, sign-reader. Tell me of the fat one."

Parks walked in silence searching for words. *"Synya, all of the people like me that you have seen belong to a . . . group—a people whose purpose it is to change . . . "*

"Planets."

Parks smiled and nodded. *"Yes,* planets."

Synya looked at the muddy path, the boot-prints of the one called Dean filling with water. *"As the Endless Trail is a* planet. *And to make them better places."*

Parks nodded. *"There are different parts in the process of changing a* planet. *The first part is called* troubleshooting. *Each* planet *is a puzzle that must be solved before it can be changed."*

Synya looked up at the grey sky. *"As the one called Gaum did here?"*

"Yes." Parks looked toward Synya. *"It is a special task, different from the actual process of what we call terraforming, changing the* planet."

"As we have special ones to read the signs, find the water, dig the channels."

Parks nodded. *"The ones who change the* planet *take the solutions of the* troubleshooters *and perform the task of change."*

Synya again shook the water from her mane. *"But what of the fat one?"*

"He, Dean, and I are trained to be troubleshooters. *The fat one commands a group of* troubleshooters."

Synya stopped and placed a clawed hand upon Parks's arm. *"Then why . . . why are you here, if the one called Gaum has already done this—solved our puzzle?"*

Parks grimaced. *"It is a punishment. The fat one is in disfavor with his superiors—"*

Synya's eyes widened. *"The fat one has superiors?"*

Parks shrugged. *"Yes, but not that he acknowledges. That is why they do not smile upon the fat one and have given him—and us—this punishment."*

Synya studied Parks's face. *"You find the first task exciting, but the second without interest?"*

"Synya, the job we do has challenge, danger. We are scraps of flesh with nothing but our minds and instruments. Take this and throw it against a strange planet—*skies that rain fire, great pools of water that can reach out and destroy a mind, flying and crawling creatures that can kill with only a touch—"*

Synya turned and resumed following Dean. *"And the fat one is nourished by this danger, but is starved—"* She pointed at her breast. *"—in here at finishing the task when the danger is past."*

Parks nodded. *"He will finish the task here, Synya, as fast as he possibly can. Just to be done with it. That is the dislike of this task you read in his face."* Parks shook his head. *"He could not stop what is happening here if he wanted."*

Synya looked down at the muddy trail. The brown flash of a tiny creature fled into the grass. *"This is why you believe I should not trust the fat one?"*

Parks shut his eyes and nodded. *"Yes."*

They walked in silence for a long moment. *"Sign-reader, I think you to be wrong. My mind is not settled on this, but I think you to be wrong. But there is something I do not understand."*

Parks shrugged. *"What is that, Synya?"*

"You speak this way about the fat one, that I should not trust him. And when you were together speaking in the human's yodel, I read anger and disrespect in your words toward him." Synya faced the one called Parks. *"Yet you hold a great love for the one called Miklynn."*

Parks studied Synya's face, then turned his head and again faced the direction of the trail. *"Yes."*

"Why is this, sign-reader?"

Parks shook his head and continued walking. Synya read the signs of a struggle within the human sign-reader. The one called Parks slowed to a stop, his gaze still fixed on the trail ahead. Synya stopped beside him. *"Synya, I once faced a moment such as that which killed Volyan. The details are unimportant. But my god was dead—it had never lived. All that I knew of the universe and my place in it was smashed. . . . I think I would have done the same as Volyan, but then Miklynn came along. He gave me* planets *to test myself against. He forced me to find a new place in the universe, a new meaning. Yes, I love him."*

"Then, sign-reader, in what do you believe?"

Parks looked down. *"In myself, to a small degree. For the rest, I believe in Miklynn."*

Synya stood erect. *"You think the fat one to be a god?"*

Parks laughed, shaking his head at the same time. The laughter brought the wetness to the sign-reader's eyes. *"No, Synya, no. Miklynn is no god."*

"But you trust him?" Synya watched as Parks turned and continued down the trail. She remained standing, and shouted against the sound of the rain. *"You trust him, yet you tell me not to trust him?"*

Parks stopped and turned back toward Synya. *"I do not trust him to be always right. He can have my life anytime he asks for it. I owe it to him. But he is not always right."*

Synya watched the sign-reader move down the trail. She turned and followed, her mind troubled.

After the tenders had returned to their huts, Synya and the two humans sat on beds of dried grass in the large shelter of her son, Royah. Synya's son had brought coals and dried vine bark to build

a fire of celebration. The visit of his mother and her strange companions would be cause enough for the fire, but it had been planned for a long time. Royah's granddaughter and her mate and babe were to leave and move toward Kadnu. The babe, Vidnya, would begin with Ashah's new growth and gather its size, strength, and grey hairs tending the growth, until it and the growth were touched by the ice wind and charged with feeding the people of Ashah.

As the hut warmed, the humans pushed back from their heads their fur-ringed skins, then unsealed and removed them altogether, exposing the fabric of their thinner, interior skins. As the fur of the two vine people dried, Synya noticed a strange smell. She looked at the one called Dean. His face held a strange expression as he turned toward Parks. "Parks, old buddy, you are getting just a little bit ripe."

Parks pulled out the neck of his green skin and sniffed. "Hmmm." He leaned toward Dean and sniffed again. "If this was a contest, I think it would be a photo-finish."

Synya nodded her head toward Parks. *"Sign-reader, what is this smell? And why do you two talk the yodel?"*

Parks faced Synya and smiled. *"We meant to keep nothing from you."* He held out his hand toward Dean. *"It is past due for Dean and I to . . . perform our . . . water ritual."*

Synya's eyes widened. *"What ritual is this?"*

Parks rubbed his chin, then held out his hands. *"We must cover our bodies with water—"*

"Are you crazy, Parks?" Dean pointed toward the open end of the hut. "You know how cold that water will be?"

Parks frowned at Dean, then returned his gaze to Synya. *"The one called Dean objects to discussing our ritual with strangers. I will attempt to show him that you are both friends and understanding."* He turned toward Dean. "Dean, you and I stink already, and this hut is just warming up. What do you think it's going to be like when the rest of the party shows up?"

The one called Dean grimaced at the human sign-reader, then faced Royah and Synya. *"Synya, Royah . . . I see my error. Is there a pool of water in which we may perform our ritual without offending Ashah or its people?"*

Royah's face grew angry. *"You would dip your bodies in waters that feed Ashah, that my people drink?"*

Dean licked his lips, then continued. *"There must be pools that do not feed Ashah, from which the vine people do not drink."*

Royah held out a clawed hand. *"I cannot see poisoning any of our*

waters to serve some . . . ritual not of Kadnu, not of Ashah." He leaned forward toward Dean to make a further point, but returned to his place, his nose wrinkled in disgust. *"Whew!"* He shook his head. *"What is the purpose of this ritual?"*

Dean smiled. *"It will remove our odor."*

Synya placed her right hand on Royah's left shoulder. *"My son, it seems that the ritual is a necessary one."*

Royah nodded. *"It is Kadnu's own truth."* He pointed toward the back of the hut. *"Beyond the end of the root—way beyond the end of the root—there are pools. Use but one of these pools and mark it well."*

Parks and Dean stood and lifted their packs. Parks turned toward Royah. *"How shall we mark the pool?"*

Royah thought for a moment, then turned toward Synya. *"How shall they mark the pool?"*

Synya made an 'x' in the soil of the hut's dirt floor, then looked at Parks. *"Take two lengths of bark with you and stick them into the soil so that they stand upright, but crossed in this manner."*

Dean studied the mark, then pointed at it. *"What is the mark's meaning?"*

Royah covered his mouth and snuffled into the hair on his broad chest. Synya held out her hands. *"It is not important. But should the vine people see this, they will avoid the pool."*

Dean frowned and his voice took on many of the qualities of the fat one's voice. *"What is the mark's meaning?"*

Synya lowered her hands. *"It is a sign-reader's mark. There are tiny boring worms, other creatures that appear as only a slight brown tint to the water—they are not good for Ashah. They make Ashah's roots die. If the vine people drink from such waters, their waste is painful and thin."*

Dean turned toward Parks. "Diseased. I've got half a mind to sit in here and stink up the place."

Parks pushed Dean from the hut. "I can't stand it any more than they can. Let's go." Parks waved at Synya, then followed Dean.

Synya listened to their boots sucking at the mud for a long while then she faced Royah. *"You have heard about Volyan?"*

Royah nodded. *"This is why you have come?"*

"Yes."

Royah looked at Synya. *"Volyan now serves Ashah and the Lost Ones. It is my own wish when my time comes."* He looked at the fire and took a deep breath. *"The smell improves."* He looked back at his mother. *"Did he fall from the vine; or did he wander too far*

looking for signs, falling to the ice scavengers?"

Synya turned her eyes from Royah and looked at the fire. *"My son, Volyan dug his own root-end and caused his own death. The ones called Dean and Parks, and I your mother, replaced the soil and built and marked the mound."*

Royah's eyes widened. *"Volyan . . . was mad?"*

"No."

Royah looked at the fire. *"The creatures with you. Do they . . . have they something to do with this?"*

Synya wiped a clawed hand across her face. *"Something, but they did not kill Volyan. They bring with them an awful knowledge. Volyan chose death rather than life with what he knew."*

Royah looked out of the open end of the hut. The rain was thinning. Soon the clouds would leave Kadnu's face, letting his light warm the ground. *"Synya?"*

"Yes, my son."

"Do you hold this same knowledge—that which brought Volyan to end his own life?"

Synya nodded. *"Yes. I have held this knowledge for many growths."*

Royah looked at Synya. *"Yet you choose to live."*

Synya shook her mane. *"Royah, I have not chosen to die."*

"There is no difference."

Synya closed her eyes. *"There is a difference, Royah. I cannot explain it, but there is a difference."*

Royah was silent for long moments. *"Then I must accept what you say. You are my vine-master."*

"Royah, do you trust me?"

Royah stared at Synya. *"You are my vine-master. You ask strange questions."*

Synya held out her hands, claws extended, then she pointed the claws at her own breast. *"Do you trust me? Do you trust me to be always right?"*

Royah stared at the fire, then added a stick of bark to the flames. He looked down at the ground between his legs, then looked at Synya. *"I do not know how you would have me answer your question."*

"With the truth!"

Royah looked back at the ground. *"Vine-masters make mistakes. They are not gods, Synya. You are not a god."* He lifted his gaze to the fire. *"You made a mistake four growths toward Kadnu when you argued with the sign-reader about where to root Ashah to keep the vine moving toward the light. It took another three growths for you to correct the mistake."* Royah looked back at the ground. *"And other*

vine-masters have made mistakes." He looked at Synya. *"This is a hard question, Synya."*

Synya nodded. *"I still need an answer."*

Royah held his hands to his head, then clasped them beneath his chin. *"I do. You can make mistakes, but I trust you to be always right."* He held out his hands. *"If I did not hold this trust, I should have to challenge you for the position of vine-master. I would have to because not to trust you I would have to think myself superior to you in my knowledge of Ashah, Kadnu, and the good of our people."* He shook his mane. *"I do not think of myself in this manner. I trust you to be always right because you are the superior in knowledge."*

Synya covered her eyes with her hands. *"Even though I can make mistakes."*

Royah nodded. *"What choice have I? I must trust you to be always right."* He shook his mane. *"These are strange questions, Synya. The answers hurt my head. Why do you ask them?"*

"I must place my trust in the same manner, and for the same reason."

Royah pointed a claw toward the back of the hut. *"In one of those two creatures?"*

"No. The other that went before us."

"The fat one who has the cutters and carriers building the strange shelter?"

Synya nodded. *"You have seen him?"*

"No. News of his instructions reached me, but I did not see him." He wiped a clawed hand across his face. *"Synya, this knowledge that Volyan could not bear; am I to share it?"*

"No."

Royah nodded, then looked at Synya. *"Have you a fear that this trust you have in the fat one may be a mistake? Synya, do you trust yourself; do you trust yourself to be always right?"*

Synya stared at the fire. *"In asking hard questions, Royah, you are easily my superior."*

They both sat in silence while the fire crackled and the strange beings splashed and cursed in the cold water far beyond the end of the root.

Synya—oldest and master of the vine—stood closest to the fire holding the babe, Vidnya, in her arms. Royah, flanked by the babe's parents, Ahrmin and Dathroh, squatted in the first ring around the fire, while their friends and relatives completed the ring. In the third ring, against the wall of the hut, the ones called Parks and

Dean listened and observed the ritual of the newborn and the new growth.

The babe, although thickly coated with hair, had no claws or fangs. Synya held Vidnya out, the babe's face and body toward the fire. *"Vidnya, observe the heat, the flame. Love them and mind them, for they are the nature of Kadnu. Observe the light, for Kadnu will direct you as you grow to tend Ashah's new beginning."*

One of those squatting in the first ring pulled forward a sack made of vine leaves glued together with sap. The sack was opened, exposing a mound of snow. The snow was made level with clawed hands, then Synya turned her back on the fire and placed the back of the babe upon the cold, soft bed of ice crystals. The babe whimpered at the feeling of cold on its back.

"Vidnya, observe the cold and whiteness. Fear them, but mind them, for they bring the ice and death." Synya held her clawed hand over the babe's eyes. *"Observe the darkness, for it brings with it the end of the growth you shall tend. And when your growth of Ashah has fattened, then fed and sheltered its people, your duty and your life shall end, your body to become a part of Ashah, to bring the life of Ashah to those who wander in the darkness. In death you shall serve the Lost Ones as in life you shall serve Ashah."*

Synya lifted the babe from the snow, held it aloft, then handed the child to its mother. A roar of approval filled the large hut, then those near the hut's entrance brought in great pieces of vine meat. Synya removed herself from the center circle as others began the task of cooking the feast. She stepped through the first and second rings and squatted next to the one called Parks. She read a curious look in his eyes, a calmness in his face. When she spoke, she kept her voice low, that only the humans could hear. *"Sign-reader, do you find our ritual savage—childish?"*

The one called Parks slowly shook his head. *"No, Synya, I found it beautiful; its form, its meaning, its purpose."* The human sign-reader kept his gaze on the activities in the center of the hut—the preparations for the feast, the touching of the babe, the rough well-wishing to Vidnya's parents. The one called Parks observed this as he leaned back against the wall of the hut, his mind closed to all but his eyes.

Synya looked past the sign-reader to see the one called Dean sitting cross-legged, his elbows on his knees, black anger upon his face. He too studied the activities in the center of the hut. Synya licked her tongue over her fangs, then spoke. *"And you, Dean. How do you find our meaningless ritual?"*

Dean turned his head toward her as though his face had been slapped. *"It is not meaningless!"* He spat out the words in a hoarse whisper, then pushed himself to his feet. *"It is true!"* He stepped around Parks and Synya, then went through the entrance to the hut.

Synya watched the one called Dean until he left, then stared open-mouthed at the empty doorway. She turned to Parks to see the human sign-reader's mouth also hanging open. *"The one called Dean, sign-reader; what did he mean?"*

Parks closed his mouth, frowned at the doorway, then slowly shook his head. *"I do not know, Synya."* Parks stood and faced the doorway.

Synya held out a hand and placed it on the sign-reader's arm. *"Parks, does the one called Dean have gods, or a god?"*

Parks shook his head. "No."

"What can he mean then—that our ritual is true? What can he mean?"

The one called Parks held out his hand toward the entrance. *"Synya, let us find out what he means."* The sign-reader stooped, picked up the packs of the two humans, then stepped around Synya and left the hut. Synya took her shelter roll and followed, after bidding her son farewell.

A third of the way toward the main path, Synya and Parks caught up with the one called Dean. He was sitting on the low curl of a root branch, tossing his talking box from one hand to the other. Synya read anger in his face. Dean looked up at them, then back at the box he tossed from hand to hand. After long moments, the one called Dean looked up again at Parks, then spoke the yodel of the humans. "Red won't answer his communicator. Neither will the orbiting station or the command ship."

The one called Parks pulled his own talking box from his belt and spoke to it. "Red?" He waited. "Red, where in the hell are you?" He waited, shook his head, then turned a small knob on the box. "Arango? This is Parks. Answer up." The human sign-reader studied the box for a moment, then he smiled. "Arango, I'm willing to believe that one communicator is not functioning, but not two at the same time, and if you don't answer I just might tell Red about you and a certain somebody named Julia."

A long silence, then the box spoke. "This is Arango, you sonofabitch. Red ordered communications shut down, and you better hope like hell that he isn't listening in on this channel."

Parks thought for a moment, then held the box to his mouth.

"Where is Red, and what's going on?"

"Red's at the hot end of the same vine you're at. I don't know what's going on." The box crackled for a moment. "The bunch Assir took up is on its way back. Red ordered Assir to put down near where he is now."

The one called Parks frowned, thought for a moment, then spoke into the box. "Thanks, Arango. And I didn't really mean that—telling Red about Julia."

"Fry in Hell, Parks. Arango out." The box went dead.

Synya watched as the one called Dean raised his eyebrows at the sign-reader. "You mean Arango got Julia—"

"Zip it up, Dean." Parks looked at Synya, then back at Dean. *"Synya and I want to know what you meant about the ritual."*

Dean hung his talking box on his belt and stared at the still-moist ground in front of his feet. *"It is true. All of what Synya said in the ritual is true."*

Synya squatted in front of the one called Dean. *"How can this be?"* She held a clawed hand against the soil. *"This is but a great ball floating in nothingness. Kadnu is a ball of burning air . . . and the Lost Ones. They walk the other side of this ball. How do we serve the Lost Ones? How will Vidnya bathe in Kadnu's light—"*

"Look." Dean bent over and drew a great circle in the moist soil. To the right of it, he drew another circle with lines coming from it. He pointed at the smaller ball. *"This represents Kadnu."* He moved his finger back to the original circle. He marked off a small segment at the top and an equal segment at the bottom. Above the top segment, he drew in an arrow pointing away from Kadnu. *"This is the direction in which the* planet *rotates."* Underneath the arrow, Dean drew a smaller arrow pointing toward Kadnu. *"This is the direction in which Ashah grows."* He pointed at the dark end of the segment. *"This is the end of Ashah that feeds the vine people, and where the root ends and branches are severed."* He looked at Synya. *"And this is where Volyan is buried next to one of the severed roots."*

Synya studied the picture in the soil, then nodded. *"But, Dean, then comes the ice."*

The one called Dean nodded and pointed around the half of the circle away from Kadnu's light. *"Volyan is buried deep, and as the planet rotates, both he and the root end will go under the ice. But . . . while this happens, Volyan will . . . "* Dean looked at the sign-reader, then back at Synya. *"He will become part of that root end—nourishing it and keeping it alive."* Dean's finger followed the curve of the ice side until he reached the bottom segment. *"This is*

where your Lost Ones are." He drew a small arrow beneath the segment pointing away from Kadnu. *"This is the direction they must travel to avoid the death-burn."* He moved his finger to where dark turned to light for the Lost Ones. *"And this is where Volyan, as part of Ashah's root end, breaks through the soil. The vine-masters there train the sprouts to root and grow together, forming a single vine body."* Dean pointed along the Lost Ones' segment toward Kadnu. *"At the hot end, the vine is fat, and it is cut to feed the vine people there. They tend their portions of their Ashah in much the same manner as your people."* Dean sat up, folded his arms, and rested his elbows on his knees. *"And when the Lost Ones die, they too are buried along with severed root ends of their Ashah."* He unfolded his arms and pointed at the side of the circle facing Kadnu. *"In the heat that reaches deep into the soil, the bodies of the Lost Ones and the vine roots . . . change. They both . . . come apart, then become one with the soil."*

Synya shook her mane. *"This makes no sense to me."*

The one called Dean moved his finger around the hot side until he came to the growth-end of Ashah. *"What do your sign-readers look for here, Synya? What do they do?"*

Synya studied the diagram. *"At the growth end of the vine, the sign-readers study the soil with their eyes, claws, and tongues. Then they mark the places where Ashah's roots must be . . . led. Where the water must be brought. . . ."*

Dean nodded. *"The sign-readers are looking for the old graves of the Lost Ones—fertile soil in which to root Ashah. The Lost Ones, and Volyan, then become parts of the new Ashah."*

Synya stood, looked at the great body of Ashah stretched across the horizon, looked at Kadnu, then back at the diagram at her feet. *"And they will serve Ashah and the Lost Ones as Ashah has served them. They will become Ashah, and Ashah will become them. . . . And Kadnu's light will shine upon them forever."*

The one called Dean looked up at Synya. *"Do you know what the Lost Ones call your people?"*

"They know of us?"

Dean nodded. *"First by legend, then by their vine-masters being taken up and shown what your vine-masters are being shown."*

"What do they call us?"

Dean looked down, but not at the diagram. *"In their language, they call your people the 'Lost Ones'."* Dean looked up at the human sign-reader. "I had Arango shoot me down the stuff on the other side before Volyan killed himself."

Parks looked at Synya. Her eyes were raised toward the vine. *"It is true. Despite everything we have seen, it is true. The light of Kadnu shall shine on Volyan—and all our dead—forever."*

Parks looked down at the diagram, then erased it with his boot. *"As long as Ashah and the other vines live, it is true."* He threw Dean a pack, then began shouldering his own. *"But you forget, Synya; we are here to kill your vines. We will make you fat and rich and we shall have brought to you the many wonders of many worlds to teach you, to do your work, to amuse you. All you must do in exchange is . . . deny that which you know is true. All you must do is kill your god."*

Dean stood and shouldered his pack, then faced Parks. "What're you going to do?"

Parks shook his head as he looked at the vine. "I don't know. Why did Red order a communications blackout?" The sign-reader looked down for an instant, then pulled the talking box from his belt. He pressed his finger against it several times, then spoke at it. "Red, this is Parks. Answer." The box was silent. Parks pressed his finger against the box several more times, then spoke again at the box. "Red, I'm going to keep beeping your box until you answer." Still the box remained silent. Parks pursed his lips, then held the box to his mouth. "Red, what if I told Arango about you and a certain person named Julia?"

The box crackled for an instant, then Synya recognized the fat one's voice. "Parks, you sonofabitch, you are going to look damned silly with your leg shoved down your throat—hip first! Now, I ordered a blackout; what'n the hell're you doing on the damned horn?"

"Why the blackout, Red?"

"Parks, have you gone stupid on me all of a sudden? Now, it wouldn't make much sense to order a blackout, then to tell you over the horn—with everyone listening in—just why I don't want them to hear what you want me to say." The box was silent for a moment, then spoke again. "Where are you and Dean?"

Parks spoke into the box again. "We're on a path just beyond the first growth."

"I want you two to move up to the hot end as fast as you can. Is Synya still with you?"

"Yes." Parks paused for a moment. "Volyan is dead."

The box crackled again. "One of you had to shoot off your big mouth, right? Put Synya on the horn."

Parks held out the talking box to Synya and pointed at the small silver plate in the box's surface. *"The fat one would speak with you.*

Talk in there."

Synya held the box. *"Miklynn?"*

"Synya, I am pained to hear about Volyan. Believe this."

She looked away from the box, glanced at Kadnu for a moment, then turned back to the box. *"I believe you."* She was silent for a moment, then spoke again to the box. *"Miklynn, we have learned much since you left us, and I must tell you of these things."*

"Not on the talking box, Synya. I know the things that you know, and I will take care of everything. But no one must speak of these things on the box. Do you understand?"

Synya nodded her mane. *"I understand."*

"Do you trust me, Synya?"

She looked at Parks and read both the pain and the doubt there. She read the same in the face of the one called Dean. The tiny box in her hand seemed very heavy. *"Miklynn . . . "*

"Yes, Synya."

"Miklynn . . . I trust you." She handed the box back to the human sign-reader.

Parks lifted the box to his mouth. "Is there anything else, Red?"

"Yeah. Do you two meatballs figure you can keep your traps shut and follow orders for another thirty or forty hours?"

Parks smiled. "Are you asking me if I trust you, fat one?"

"I'll give you a fat one. . . .What about it? You two going to follow orders or not?"

Parks looked at Dean. The one called Dean kept his eyes down, shrugged, then faced the sign-reader and gave a single nod. Parks spoke into the box. "Okay, Red. We'll see you at the hot end." He hung the talking box on his belt.

Synya studied the sign-reader's face. *"Sign-reader, did the fat one ask for your trust?"*

"Yes." Parks nodded. *"In his own way."*

"And will you trust him? I remember what you told me before about your trust."

Parks studied Synya, then looked toward the vine. *"I trust him . . . this time."* He shook his head. *"I do not think I have a choice."*

The ice wind blew, but the sky remained clear as Synya and the ones called Parks and Dean came to the main path and turned in the direction of the food carriers. They offered little in the way of greetings to those vine people that saw them; they offered nothing in the way of explanations. As they passed each growth scar encir-

cling Ashah's body, the vine grew thinner, the grass taller, until at the twenty-seventh scar the vine was no thicker than Synya's height. Kadnu was higher, and the three erected their shelters in a shadow made by a high curl and twist in the vine. The people serving the twenty-seventh growth were in their middle years, and Synya watched them at their work and play as she listened to the yodel of the humans coming from their shelter.

"Parks, how do you think Red will get them off this rock?"

A long silence. "I don't know. Maybe he has some other answer."

"What answer?" The one called Dean snorted. "With the figures we have now, it'll take maybe six or seven years to bring this planet up to speed, then another I don't know how long for the air masses to adjust. Then there's reestablishing the population, getting them set up as farmers, establishing a social framework, seeding the damned place . . . "

The one called Parks laughed. "Red's not going to like that, but he has a reputation to protect. No planet's ever licked Red, and he certainly won't throw a farming job—"

Synya heard the beep of a talking box, then she recognized the voice of the one called Assir—the one who had taken the vine masters away. "Red?"

She heard the fat one reply through the same box. "What is it?"

"Do you want me to shoot down the data the rockhounds dug up? I have—"

"Assir, I ordered a commo blackout. Didn't you get that from the orbiter?"

"Yeah, but I thought—"

"Quit bragging, Assir. If I want the data before you land, I'll ask for it. Just put that crate down near the hot end of this vine as soon as you can. But not too close. Put it down around a thousand meters north of the vine. Understand?"

"I understand. Assir out."

Synya listened, but the fat one made no reply. Instead, she heard the movements that spoke of the humans making ready for their sleep period. They were quiet and still for long moments, then the one called Dean spoke in a quiet voice. "On a compassion scale of one to ten, where would you place Red?"

"Off the scale." The one called Parks paused for a short moment. "But which way, I don't know."

"Red isn't exactly a bleeding heart, Parks."

A long silence. "We don't always bleed for the entertainment of others, Dean."

"What's that supposed to mean?"

"How much do you know about Red, or me, or yourself for all that goes? I've been with Red longer than anyone in the group, and I know that I don't know him. On the outside, he blusters and blows a lot, but you know the scrapes he's gotten us through. He's smart, he's got guts, and he's loyal to us—the people in his group. He . . . he's also got this thing about the job. I suppose it's a kind of loyalty to himself. But what he feels inside, about anyone or anything, I don't know. I don't even know if Red knows that."

One of the vine tenders came into view not far from Synya's shelter. The vine tender shielded its eyes from Kadnu's light and looked toward Synya. Synya motioned with her hand that she was not sleeping and the vine tender ran to stand in the grass in front of the shelter's opening. *"Synya, vine-master."*

Synya studied the vine tender's face. *"Your name?"*

"My name is Tuneh, vine-master." Tuneh glanced from Synya to the human's shelter then back to the vine master. *"Vine-master, these strange creatures following on the heels of the fat one that went before. There is much talk."*

Synya turned from the female and curled into her sleeping position. *"There is always talk."*

"But what is their meaning, vine-master? What will they mean to the vine people?"

Synya moved her position slightly, then settled herself more comfortably. *"Of these things I must not speak."* She listened as the vine tender moved away with slow steps. The fat one had said to speak of nothing on the box. Synya nodded as she began to doze. Even without the box, silence appeared to be sound advice.

The sky was clear despite the wind at their backs as Synya and the two humans left the scar of the twenty-seventh growth behind and followed Kadnu. The humans had removed their thick outer skins and wore only their thin inner skins. As they approached the thirty-fourth growth, the seed pods on the tall grass stalks were fat and covered with insects waiting for the pods to open that both they and the seeds could move toward Kadnu. Tiny brown-furred creatures moved through the grass to meet the insects when they landed.

The light green of the humans' inner skins were stained dark with wide patches of moisture as they moved ever closer to the newest growth. Past open seed pods being emptied by the wind, the vine tenders became younger and wore caps made from Ashah's leaves. At the scar of the thirty-ninth growth, the tenders wore both

caps and capes of leaves. Synya and the two humans left the scar in similar attire. At the forty-fourth growth, the vine—now no thicker than the leg of the one called Dean—lay across the bare, seeded ground. The heat of Kadnu shimmered from the soil making each breath for the humans something thin and ungratifying. They paused there to watch leaf-covered vine tenders and their young gathered away from the vine, performing some ritual. The one called Parks, his breath short, turned toward Synya. *"Synya, what are they doing . . . and in this heat?"*

Synya narrowed her eyes against Kadnu's light and examined the tenders and their activities. She stopped, turned toward the one called Parks, then shook her leafed head. *"This ritual has no meaning for me, sign-reader."* She looked at the one called Dean. *"Do you know what this is?"*

Dean frowned and studied the vine tenders. *"Synya, it looks . . . "* Dean shook his head, then nodded as he saw a puff of smoke erupt from one of the leaf-covered beings. *"They are playing a game we call* baseball."

Parks frowned, then closed his eyes as his body began shaking. Synya shook her head and looked back at the vine tenders. She too

saw smoke erupting from one of the leaf-covered beings. The creature was bent over, peering across the head of a squatting tender. In front of them both, another tender stood holding a heavy stick made of bark. All three of them were facing another tender who was whirling about with his arms. From the gyrating tender flew an object toward the three facing him. The one with the heavy stick swung at the object, but missed. The one squatting behind the one with the stick caught the object, while the one who smoked stood erect and made a gesture with a human hand. "Yer out!"

As the one with the stick threw the piece of bark to the ground, another came to take his place. Synya walked toward the group, followed by Dean and Parks. The smoking one turned at the sound of their footsteps, then he motioned for one of the vine tenders to take his place behind the squatting one. He turned toward Synya and the humans and met them a short distance from the play. *"It is good to see you, Synya."* He turned toward the humans. "It's about time you idiots showed up. What'd you do? Take the scenic route?"

Synya ran her tongue over her fangs. *"Miklynn, we are here."* She held a clawed hand out toward the tenders. *"What do you call this?"*

The fat one looked back at the players, then smiled around his cigar and turned back. *"They are good, are they not? With those claws, Melyeh can put a spin and dip on that gob of dried sap I do not believe myself."* He looked at the two other humans and pointed at the players with his thumb. "I had to do something to kill time waiting for you two."

The one called Parks studied the players, then looked back at the fat one. "The team have a name?"

The fat one nodded. "The Miklynn Fireballs. First team of the Endless Trail League." He then faced Synya. *"We all speak the language of the vine people."* He turned back to Parks. *"The tenders of the other vines will learn of this game, for the Fireballs will teach it to them. Is this hard to understand?"*

Parks sighed and turned toward Synya. *"The fat one will make things clear to us in his own manner, and at the time he chooses."*

The fat one grinned, then looked up at the sky. *"Synya, I am waiting for the one called Assir to bring back the others."* He looked back at the vine-master. *"The vine people will not have to leave the Endless Trail."*

Synya and the two humans stared at the fat one, but he again returned his glance to the sky. "Ah hah!" He began running away from the vine, motioning with his arm. *"Come, Synya. Run, Parks and Dean. Here they come."* They ran toward the speck in the sky

which rapidly grew to become the huge craft that had taken away the vine-masters. The craft landed on its five legs before Synya and the others reached it. The fat one slowed to a walk as the underside of the craft opened and the vine-masters began disembarking. The fat one looked at the one called Parks. "Just follow my lead. Got me?"

Parks noticed that neither the Fireballs nor their fans were following them. "What lead? Miklynn . . . "

Synya saw the fat one wave his hand impatiently at Parks. She looked back at the craft, and then she saw them: taller, thinner versions of the vine people, but with no fangs and short, stubby growths where their claws should have been. Their pelts were deep grey, thick and shiny. Synya reached out her hand and placed it on the fat one's shoulder. *"Miklynn, are they . . . the Lost Ones?"*

Miklynn nodded as they came into the shade given by the craft. The vine-masters of Synya's kind were chattering with the Lost Ones. Neither of the races were speaking words of comfort or pleasure. A huge, dark human—the one called Assir—separated from the group and approached the fat one. "Red, here they are, and there's no problem with the seismics. This rock has a crust as thick as your head." He swung the pack he was carrying to the ground. "The stuff you wanted is in there."

Miklynn squatted before the pack, opened its flap, and peered inside. Closing the flap, he stood and shouted. *"Still your mouths!"* The fat one turned to the one called Assir. "They all talk the vine-people lingo? This side's?"

Assir nodded. "We adapted all of them. Each speaks the language of the other."

The fat one nodded once, then turned back to the group. *"Silence!"* When all was quiet, the fat one looked over their faces, then he spoke. *"The one called Gaum made a terrible mistake."* A few of the vine-masters spoke in hushed whispers, then fell silent again. *"This place you all call the Endless Trail needs no changes. It shall be as it has always been. We will leave—"*

Parks grabbed Miklynn's arm and swung the fat one around. "What in the hell do you think you're doing?"

The fat one pulled himself free. "Try that again, Parks, and I'll tie you into a big knot."

"Haven't we screwed around with these people's minds enough, Red? Why did you tell them—"

The fat one held out a hand, palm toward the one called Parks. "Now, you shut your mouth. I'm going to need you in a minute, but

you won't be much use to me with your teeth knocked down your throat." The fat one looked from Parks to the ones called Dean and Assir. "Look, do you dirtbrains want to spend the next six to eight years farming this rock, or do you want to get on with our own thing?"

Assir pursed his lips, then cocked his head to one side. "Do these ears of mine hear correctly that Red Miklynn is going to throw a farming job? They'll toss you out of the Corps so fast that—"

"No one is throwing anything, Assir." The fat one looked back at the restless vine-masters. *"I must consult with my companions. Please understand and accept my apologies."*

He turned toward Assir. "Okay, craphead, you're the science officer. You ever see a planet in more perfect ecological balance than this one?"

"No, but—"

The fat one turned toward Parks. "Is the population healthy, happy?"

"As far as I know, but—"

The fat one looked at the one called Dean. "Tell me the vine people's word for crime, or their words for war, rape, theft, or government screwups."

Dean shrugged. "They don't have equivalent—"

"They don't have them, dirtbrain, because they don't need them." The fat one looked down at the ground, then glanced at the faces surrounding him. "This rock doesn't need terraforming; Earth should be in such good shape. Any damned fool can see that."

The one called Parks laughed, then nodded his head at the fat one. "Go ahead, Red. Do it." He laughed again. Assir and Dean both looked at Parks and began talking at the same time.

The fat one held up his hands for quiet. "Go ahead, Parks. Tell them."

Parks laughed to himself for a moment, then turned to face Assir and Dean. "Red's getting us out of the job. We're done. Finished." Parks nodded as Assir opened his mouth to speak. "Oh, there will be a fuss, but I imagine that Red can put up a good argument that this rock doesn't come under the regulations. The population is sentient, with both a spoken and written language. Remember those signs on the mounds? And it is a governed society, which places it way outside the Savage Planet Regs. The government may be a sun and a bunch of vines, but it works better than most."

Assir looked at the fat one. "Red, the Quadrant has big credits tied up in this project. Big enough credits that your argument won't

hold enough water to make a teardrop. Nothing's going to stop those eight-hundred thrusters that are on their way here."

The fat one rubbed his chin. "Maybe. But, Assir, I have a hunch that once you examine that seismic data again, you'll find that the crust on this rock is a little less stable than those thrusters will need to bring this planet up to speed in only six or seven years. It'll probably take, say, fifteen or twenty years."

Assir grimaced at the fat one. "So I'll fake it. There are a few ancient faults I can doctor up." He nodded. "And that will make the project a net loss, so . . ."

The fat one folded his arms. "So, once we get back upstairs, we might as well reassign those thrusters to other farming operations." He looked around at the faces once more. "Are we all straight?" The ones called Dean, Assir, and Parks nodded. The fat one turned and faced the group of vine-masters. *"It is as I have said. Gaum made a mistake. We will leave, and things will be as they have been."*

One of the vine-masters stepped toward the fat one. It was Morah, and his eyes were wild, his claws extended. *"You come here . . . show us our god is false! You show us the Trail to be a circle! You destroy Kadnu, and now you will leave and things will be as they have been?"* A low roar erupted from the vine-masters, and they started moving toward the humans.

The fat one looked over his shoulder. "Parks. It's time."

Parks walked forward, stopped, and held up his hands. *"Silence!"* The roar lowered to a grumble. *"I want silence!"* And there was silence. Parks lowered his hands, then continued in a soft voice. *"We have not destroyed your god. His light shines all around you. Ashah and the other vines of the clawed vine-people still follow Kadnu, and the vines still feed you, shelter you, and protect you against the heat and the ice. Still the vines of the grey vine-people spring from the soil, and the god remains at your backs, melting the ice, serving you as it has always done. Still you die and join your vines, become parts of them, each vine people serving their Lost Ones, who in turn serve them. We have not destroyed your god."*

Parks looked down for a moment, then he turned and looked at the fat one. He frowned for an instant, then smiled and shook his head as he looked back at the vine-masters. *"Think of the Endless Trail. We have not shown you the Trail to be false, for what is more endless than a circle?"* Parks pointed toward Ashah. *"At the feeding end of this vine is a structure that we have brought to you. It looks as if it were a huge shelter with no doorways. All of you will travel the length of Ashah to see this thing. Turn it over and it will become*

what is called a boat. *It will float on water. First learn to build* boats, *then move along the ice, always keeping Kadnu to your left, past the land of the last vine, and there you will find the waters that will bring you to the world of the grey vine-people.*

"You will travel that world, always keeping Kadnu to your left, until you again reach waters. These waters will bring you again to this world. We have not shown the Trail to be false; we have proven it to be true. And you shall prove this to yourselves. We have not destroyed your god; we have shown him to be real by carrying you to a place where you could see it and watch its face."

Morah lowered his arms and shook his mane. *"These things that we have been shown . . . that god is a ball . . . of burning air—"*

A strange look came into the face of the one called Parks. It was a look of pain, yet of anger. *"Your god gives you everything you have. It has served you and will never fail you. Do you demand that your god also be not real?"* Parks looked at the faces of all of the vine-masters from both sides of the Endless Trail. His voice became very quiet. *"Your god will serve you, if you do not demand too much from it. To be real, yet not real, is too much."*

Synya sat in the shade of her shelter, puffing on one of the smoke sticks. The fat one left her a box of them. She savored the bittersweet taste of the smoke, then looked away from the practice session of the Miklynn Fireballs. The vine-masters had been gone a long time—long enough for them to have seen the boat, long enough for them to have put Kadnu to their left and begin the long journey. They had lingered long enough to study and learn the game the Fireballs played, but the fat one and his craft had left long before the vine-masters had learned the game.

Synya looked down at the second box the fat one had given her. It was of green metal with rounded corners. When he gave her the second box, the fat one explained its use. *"Synya, we and the vine-masters have made a decision for an entire world. None of us knows if this will be the right decision for all time."* The fat one had opened the box as the ones called Parks and Dean looked on. Inside the box was filled with a silver plate. From out of the plate extended a sliver of black. *"If ever the vine-masters change their minds, Synya, all you need to do is to move the sliver of black. It will send out a call, and someone will answer it. If you want the things that we can bring you, all you must do is to move the black sliver."*

Synya opened the box and looked at the black sliver. The fat one had said that the box would last for endless growths. Some vine-

master thousands of growths in the future would still be able to send out the call, bring back the humans, and turn the Endless Trail into a farm world. She lifted the object the one called Dean had given her after the fat one had returned to the craft. The object was also of metal, but it was ribbed at its thick end and formed a flat blade at the tip of the narrow shaft that extended from the ribbed end. Dean had spoken as the one called Parks looked on. *"Synya, the box the fat one gave you is very rugged, and it will last forever."* Then he had given her the object. *"But you must be careful not to take this—it is called a* screwdriver*—and insert it into those two slots and twist the slots like this."* He had demonstrated. *"If you do that, Synya, the insides of the box will be exposed and can be damaged. If that should happen, the box will no longer be able to send out the call."*

Synya inserted the blade into one of the two slots and thought of the one called Parks as she turned the screwdriver. What had he said in the yodel to Dean as Dean went back to the craft? The yodel had sounded like this: "I can't be certain, Dean, but I think you have started the first screwdriver fetish in human history."

Parks had turned to her. *"Synya, I am still pained at the death of Volyan."*

She had answered. *"He is one with Ashah. Do not grieve. Have you not yourself proven this to us?"*

As Synya removed the second screw from the box, she remembered the look on the sign-reader's face. *"We have proven that."* He had paused for a short moment, then looked back at the craft. *"I must go now."*

Synya had heard the pain. *"Sign-reader. Your god is dead, but mine is indestructible. Share Kadnu with us."*

The one called Parks had smiled. Synya thought of his answer as she lifted the face-plate from the box. *"I wish that I could, Synya."* He had looked at Kadnu, the light of the god washing his face. *"But I have seen too much, experienced too much."* He had looked at her as he stood to leave. *"Besides, who would take care of the fat one?"* Then he had left.

Synya moved the box out into Kadnu's light, better to see the things behind the silver plate. The things were coated with happy colors and were made of fine threads and dots of gold.

"Vine-master?"

Synya looked up to see one of the middle children who had wandered away from the baseball practice. *"Yes? Your name?*

"I am called Chiveh, vine-master." The child held out a clawed

hand toward the box. *"Could you tell me what is in there? It is so pretty."*

Synya thought for a moment, then held the box out toward the child. *"Reach in and pull out a handful, Chiveh, and we shall see."*

SECOND SOLUTION TO G. HOVAH'S PREDICTION PARADOX (from page 91)

Experts disagree! Some favor the "pragmatic argument" (take only the opaque box). Some favor the "logical argument" (take both boxes). Some say the paradox is not yet resolved. Still others maintain that the paradox proves the impossibility of prediction machines of the type involved.

The problem is known as "Newcomb's paradox" after the American physicist William A. Newcomb, who invented it in 1960. If you care to read some of the growing literature on this bewildering problem, here is a list of selected references:

"Newcomb's Problem and Two Principles of Choice." Robert Nozick in *Essays in Honor of Carl G. Hempel*, edited by Nicholas Rescher (Humanities Press, 1970).

"Newcomb's Paradox Revisited." Maya Bar-Hillel and Avishai Margalit in *The British Journal for the Philosophy of Science*, Vol. 23, November 1972.

"Free Will Revisited." Martin Gardner in the Mathematical Games Department, *Scientific American*, July 1973.

"Reflections on Newcomb's Problem." Robert Nozick in *ibid*, March 1974.

"The Unpredictability of Free Choices." G. Schlesinger in *The British Journal for the Philosophy of Science*, Vol. 25, September 1974.

"Newcomb's Many Problems." Isaac Levi in *Theory and Decision*, Vol. 6, May 1975.

"Newcomb's Problem and Prisoners' Dilemma." Steven J. Brams in *The Journal of Conflict Resolution*, Vol. 19, December 1975.

"A Paradox of Prediction." Steven J. Brams, Chapter 8, *Paradoxes in Politics* (Free Press, 1976).

"How to Make a Newcomb Choice." Don Locke in *Analysis*, Vol. 38, January 1978.

Sometimes we fear that we spend too much of the letter-column space discussing manuscript submissions. But then, we sometimes fear that we spend too much of our time **reading** *manuscripts that just . . . won't . . . do.*

About 170 manuscripts arrive each week. About 2 or 3 may be bought; the rest go back, sometimes with some specific criticisms, sometimes with a printed form that happens to fit that particular story's weakness. In a recent sample, about 6% were futile ("You've stated a problem, now go solve it!" was how John W. Campbell used to respond to such stories); 17% were in improper format (we don't reject solely because of format, but we would if the offender were a repeater and the violations were major); 16% were murky or opaque (that is, we found it hard—or impossible—to tell what was going on, or where, or why), about 18% Did Not Convince, usually through sloppy science or background details that were logically incompatible; 40% were tours- or revelations-of-wonder with no real story to make it all work; 21% were essentially pointless (failing the "so what?" test); 26% were boring, usually because of excessive details, or were too long for their ideas; 37% were based on an over-familiar idea; and 36% were just . . . **bad.** *(Some stories suffered from more than one fault, which is why the percentages total more than 100.) Obviously, we think that our much-mentioned requirements and format sheets—if read and understood by our new writers—would improve the quality of stories being sent in. Ultimately, though, the improvement of any writer, whether with a personal note, a form rejection, or our description of needs, depends entirely on that writer making a real effort to read the manuscript as if the writer had* **paid** *to read it, and to understand what's wrong with that story, and to avoid those mistakes, and—especially—to try another, better story. Science fiction is about people* **reacting** *to science; in the same way, new writers improve not by the accuracy of the criticism that they get, but by and through their own* **reaction** *to that criticism. Ultimately, then: your success as a writer is your success, not your editors', for all that your editors will rejoice in that success.*

We've recently been getting news in your letters on how well (or otherwise) the magazine's been distributed to local newsstands. This information is of the greatest value to us; please do keep supplying it!

Letters to the editor should be addressed to Box 13116, Philadelphia PA 19101. Letters to the subscription department (don't forget to send in your change of address early) go to Box 2650, Greenwich CT 06836. Matters for the rest of the staff—such as advertising rates, special orders, and the like, should be directed to Davis Publications, Inc., 380 Lexington Ave., New York NY 10017.

Some of you have asked about the length of various stories as printed in the magazine. You can get this figure, without the task of counting individual words, by taking a full printed page in the magazine to be about 470 words and multiplying appropriately. This corresponds closely with our procedure for counting the length of a manuscript for payment: count the number of letters, spaces, and punctuation marks in an average, mid-paragraph line, divide by SIX, multiply by lines per manuscript page, multiply by number of manuscript pages. Do NOT correct for short lines, as in dialog.

And finally, a word or three on puns: we get many puns which depend on a made-up name—like naming two places Bise and Red, and if you go early to Red and early to Bise—well, no need to go on. We do not buy puns based on made-up names; they're too contrived and essentially pointless. And, ever since John M. Ford's "The Adventure of the Solitary Engineer," we've been looking for long and complicated puns, to match his, "... how was the content of our winter's disc made a spurious summary by this scum of cork?"

Dear George and Isaac and Shawna,

On behalf of *Analog*, as the fifty-year-old baby of the Davis family, I had to let you know how much I appreciate all the nice things Isaac said about us in his "Welcome, Sibling!" editorial (and, for that matter, in his earlier one about our anniversary). We really appreciate them—and the help you've already given us in settling in.

There's just one little thing, though.... While I agree in general with Isaac's description of *Analog* as "a more sober partner," I would like to point out that we are not utterly without humor. Ideally, in fact, I'd like to include at least one genuinely funny piece in every issue. So I hope the heel-kickers and toe-tappers will not fear to approach our (ahem!) august presence with their offerings.

Stanley Schmidt
Editor, *Analog*
380 Lexington Ave.
New York NY 10017

Dear Dr. Asimov,

I would like to thank you and your magazine for saving my sanity. I live in a small town (pop. 1300). And in a small town, you have an equally small library. In this library, there is a grand total of *4* decent SF books. If it weren't for a friend of my mother's giving me an old copy of your magazine, I might now be locked up somewhere living on bread and water.

Your magazine offers a wide variety of interesting stories.

A sincere and heartfelt thanks,

Andy Saindon
Clifton IL 60927

It is precisely because of cases such as yours that we publish this magazine.

—Isaac Asimov

Dear Editor:

I imagine that by now you've been inundated with letters from wild-eyed females praising "A Sailor's Delight" in the May 1980 issue. I'm writing solely to add to the deluge. In less than three printed pages, Mr. Roberts has earned my unqualified respect. I didn't know that there was a male in existence who was capable of "putting the shoe on the other foot" so completely—and apparently, so honestly. I reread his story three times and each time I chuckled a little louder. Please pass my compliments to Mr. Roberts; I haven't read anything so refreshing in quite a while.

Regina George
Philadelphia PA

Would you believe that some people were highly offended at the story's presumed "male chauvinism"?

—Isaac Asimov

Dear Mr. Scithers and Dr. Asimov:

I haven't quite finished reading the June issue of *IA'sfm,* but I felt that Dr. Asimov's editorial, titled "Welcome, Sibling!" called for immediate communication with you. Having some familiarity with the financial and business scene, Dr. Asimov's announcement of the acquisition of *Analog* by Davis Publications, Inc., your parent firm, causes me to peek into some of the alternate universes and predict

an eventual merger of the two magazines, despite Dr. Asimov's fervent proclamation of their mutual and perpetual independence.

Even if business and financial considerations are left out of the picture, the thought of anything coming into Dr. Asimov's orbit without being influenced by him, with the subsequent perturbations and oscillations, resulting in another Brave New World being born—please, I'd rather believe the sun has stopped shining.

As I stated above, I haven't quite finished reading the June issue, but they all look good. Your policy of actively encouraging writers to submit manuscripts seems to result in the presentation of large numbers of good, new writers!

Best of luck in all your enterprises!

Sincerely yours,

Albert R. Strakna
3812 S. Capitol St.
Washington DC 20032

While we know not the future and cannot foretell what calamities may overwhelm us, let me tell you that there is no intention whatever of interfering with Analog *in any way.*

—Isaac Asimov

Dear Dr. Asimov and company,

Although I am a regular reader of your magazine, I do not subscribe. I do subscribe to *Analog*. The reason for this is the fact that I like serials. I like longer stories that have more room to develop the "universes" of the stories and the stories' characters. Short stories simply can not go into the depth of characterization and background that I prefer in science fiction. Still, a well written short story is far better than a badly written novel. Short stories do present an author with the challenge of telling a story in which every word must lead to creating the desired effect and lead to the story's conclusion.

I understand the editorial stand on not using serials. I do urge that you reconsider and decide to use an occasional serial. There are simply too few markets open for the beginning writer of science fiction today to hold to a short story only position.

Sincerely,

Ron Kienzle
Box 28
Niles, OH 44446

As I said in a recent article, if a serial just can't be refused, and if our good sibling, Analog, *can't use it, all right—but we don't really want to do it.*

—Isaac Asimov

Gentlemen:

Enclosed is ye olde SASE, so if it pleases it would be appreciated if a copy of your story needs, etc., was forwarded.

At the present time, I've only read two issues of your magazine (March and May of the present year), but I have enjoyed both. Moderately, at least. I found the entire March issue save Dr. Asimov's editorial and Mr. Harper's "Psychostars" immensely boring— especially Ms. Van Scyoc's story. Maybe she should move out of the dairy shed and clear her head a little.

But the May issue made up for it, despite Dr. Asimov's below average effort with "For the Birds." Below average for the good Doctor, anyway. I'd give my eyeteeth to be able to write like that. Mr. Rothman's article on FTL paradoxes was utterly fascinating. The stories? Maybe "If You Can Fill the Unforgiving Minute" deserves mention, the rest are passable.

Realistically, though, your magazine is the best on the market. I'm really rather hesitant to criticize other writers' work. Personally, I've never been able to get past the first few paragraphs without starting over. I admire them for their determination.

Sincerely yours,

Mike Beeman
National City CA

Heaven help the authors when you stop being hesitant.

—Isaac Asimov

Dear Dr. Asimov,

I am a novice reader in the area of SF. My first story was read 2½ years ago; *Stranger In A Strange Land* by Heinlein. I then read all of your stories on the shelves of the Public Library and then I went back to Heinlein and Ray Bradbury. Oh, what fun for this housewife with 4 always-aspiring-to-be-busy children between the ages of 1 and 6 years. After reading the above mentioned I had no idea of whom or what to read next. After looking through the SF section of the Card Catalog, I was even more perplexed. So I took

the easy way out by reading whatever struck my fancy in the SF department of the Children's Library. Don't laugh; I stumbled upon some pretty good books. Including *The Bleeding Man & Other Science Ficion Stories* by Craig Strete. I mentioned him because the stories were written from what seem to be an American Indian point of view, which made for some very interesting and humorous story lines. Which leads me to the following question: Are there any minority writers writing SF? By minority writers I mean non-Caucasian writers.

Jennifer Rodgers Gordon
Salina KS

Oh, yes, there are non-Caucasian SF writers, and we have published a few. One of our brightest lights, Somtow Sucharitkul, was non-Caucasian last time anyone looked.

—Isaac Asimov

Chip Delany is black, William Wu is Chinese, and Craig Strete is indeed an Amerind. There are other non-Caucasians, but if they don't tell us—and we've never met them—we have no way of knowing. Freelance writing is obviously immune from discrimination when the editor has no way of knowing the race, sex, age, and so on of the contributors—all that counts is the excellence of the writing!

—George H. Scithers

Dear *IA'sfm:* (Eye-ahsef-em?)

Frankly, I had never heard of you before. On impulse, I clipped your stamp from a magazine clearinghouse contest form, and even though I didn't win the sweepstakes, I am glad I did.

I received your April issue on Thursday, the May on Saturday, and the June on the following Tuesday. I hate to complain of too much of a good thing . . . but at this rate my year's subscription will run out sometime late next week!

Meanwhile, I have had an intensive introduction to your magazine, and I like what I see.

I am a shy SF reader. Lurid covers make me cautious. Therefore, the book review column is very valuable to me. I have just about run through all of my current favorites, and am in need of some fresh authors.

I haven't liked every story so far, by I have found something of interest in almost all of them. To me, that says a lot.

Your letters column is chummy and personal, and gives off a fragrance of real involvement with your media and with your audience. In fact, the entire publication exudes a friendly and encouraging atmosphere. (Rather like chocolate chip cookies and a rainy day.)

Thank you for coming into my reading life. Please send me your "Editorial Requirements and Format sheets," and perhaps I will come into your reading life in return.

In closing, even if the Christmas issue arrives on the Fourth of July, I, mind awhirl with worlds only seen in words, would renew.

Yours respectfully,

Polly Welden Seals
Iowa Falls IA

Oddly enough, I myself love chocolate chip cookies and rainy days. In a pinch, even chocolate chip cookies and sunny days.

—Isaac Asimov

Kathleen McGary, please contact the editor at PO Box 13116, Philadelphia PA 19101.

NEXT ISSUE

In the December issue of *Isaac Asimov's Science Fiction Magazine* you'll find Jo Clayton's "Companioning," another installment in the adventures of Gleia, with a cover by Karl Kofoed. You'll also find a collaboration by Barry B. Longyear and Kevin O'Donnell, Jr., "Bloodsong"; a new Gene Wolfe story, "The Adopted Father"; an investigation into some of the more... interesting theories of geodesy; and much more, including Dr. Asimov's editorial and our usual assortment of reviews, letters, puzzles, and other items of interest. On sale November 20.

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