

Houston,Houston, Do You Read?

JAMES TIPTREE Jr

James Tiptree, Jr., aside from the award-winning story that follows this introduction, has been justly lauded as one of the excellent writers to appear in science fiction in recent years. Precise biographical data, however, have been difficult to come by. However, with the author's assistance, the following facts have at last been collected and are hereby presented to the reader.

James Tiptree, Jr., was born in September 1967, in the import section of the McLean Giant Food Store. His birth occurred in front of a display of Tiptree's English Marmalade, which appeared to him to be a nice inconspicuous name that editors would not recall having rejected. The subsequent acceptance of his next thirty or forty stories shocked and nonplussed him, but gave him the opportunity to form many genuine epistolary friendships, since he had the bad habit of writing fan letters to writers he admired. In the course of a correspondence with Jeffrey D. Smith, a fanzine editor in Baltimore, he gave a biographical interview, in which he mentioned having been brought up by a pair of explorer-adventurers who alternated life in the Congo and the Midwest. He also reported that he had enlisted in the Army Air Force in World War II, becoming a photo intelligence officer, and subsequent to what was then hoped to be the outbreak of World Peace, he went in for a little business, a little government work, and finally settled upon a doctorate and a short research and teaching career in one of the "soft" sciences. (A "soft" science is one where you bounce back when you trip.) He refrained from mentioning to his friends that he had started life as a serious painter, because a companion personality, Racoon Sheldon, then being slowly born, seemed to need that as a biographical touch. Tiptree's writing career took a parabolic form, the downside of the curve being accounted for by a depression which caused his stories to grow blacker and more few. The coup de grace was given him in October 1977, when it was revealed that he did not exist. He feels that it was, though brief, a wondrous existence. He is survived by a short story or two in press and a novel to be published by Berkley as well as one Hugo, for THE GIRL WHO WAS PLUGGED IN, and two Nebula Awards for LOVE IS THE PLAN, THE PLAN IS DEATH, in 1973, and for HOUSTON, HOUSTON, DO YOU READ?, in 1976.

Lorimer gazes around the big crowded cabin, trying to listen to the voices, trying also to ignore the twitch,, in his insides that means he is about to remember

something bad. No help; he lives it again, that long- t

ago moment. Himself running blindly-or was he

pushed?-into the strange toilet at Evanston Junior

High. His fly open, his dick in his hand, he can still

see the grey zipper edge of his jeans around his pale

exposed pecker. The hush. The sickening wrongness

of shapes, faces turning. The first blaring giggle. Girls.

He was in the girls' can. -

He flinches wryly now, so many years later, not looking at the women's faces. The cabin curves around over his head surrounding him with their alien things: the beading rack, the twins' loom, Andy's leather work, the damned kudzu vine wriggling everywhere, the chickens. So cosy.... Trapped, he is. Irretrievably trapped for life in everything he does not enjoy. Struturelessness. Personal trivia, unmeaning intimacies. The claims he can somehow never meet. Ginny: You never

talk to me . . . Ginny, love, he thinks involuntarily. The hurt doesn't come.

Bud Geirr's loud chuckle breaks in on him. Bud is joking with some of them, out of sight around a bulkhead. Dave is visible, though. Major Norman Davis on the far side of the cabin, his bearded profile bent toward a small dark woman Lorimer can't quite focus on. But Dave's head seems oddly tiny and sharp, in fact the whole cabin looks unreal. A cackle bursts out from the "ceiling"-the bantam hen in her basket.

At this moment Lorimer becomes sure he has been drugged.

Curiously, the idea does not anger him. He leans or rather tips back, perching cross-legged in the zero gee, letting his gaze go to the face of the woman he has been talking with. Connie. Constantia Morelos. A tall moonfaced woman in capacious green pajamas. He has never really cared for talking to women. Ironic.

"I suppose," he says aloud, "it's possible that in some sense we are not here."

That doesn't sound too clear, but she nods interestedly. She's watching my reactions, Lorimer tells himself. Women are natural poisoners. Has he said that aloud too? Her expression doesn't change. His vision is taking on a pleasing local clarity. Connie's skin strikes him as quite fine, healthy-looking. Olive

tan even after two years in space. She was a farmer, he recalls. Big pores, but without the caked look he associates with women her age.

"You probably never wore make-up," he says. She looks puzzled. "Face paint, powder. None of you have."

"Oh!" Her smile shows a chipped front tooth. "Oh yes, I think Andy has."

"Andy?"

"For plays. Historical plays, Andy's good at that."

"Of course. Historical plays."

Lorimer's brain seems to be expanding, letting in light. He is understanding actively now, the myriad bits and pieces linking into pattern. Deadly patterns, he perceives; but the drug is shielding him in some

way. Like an amphetamine high without the pressure.

Maybe it's something they use socially? No, they're

watching, too. '•

"Space bunnies, I still don't dig it," Bud Geirr laughs infectiously. He has a friendly buoyant voice people like; Lorimer still likes it after two years.

"You chicks have kids back home, what do your folks think about you flying around out here with old Andy, h'mm?" Bud floats into view, his arm draped around a twin's shoulders. The one called Judy Paris, Lorimer decides; the twins are hard to tell. She drifts passively at an angle to Bud's big body: a jut-breasted plain girl in flowing yellow pajamas, her black hair raying out. Andy's read head swims up to them. He is holding a big green spaceball, looking about sixteen.

"Old Andy." Bud shakes his head, his grin flashing, under his thick dark mustache. "When I was your age-: folks didn't let their women fly around with me."

Connie's lips quirk faintly. In Lorimer's head the pieces slide toward pattern. I know, he thinks. Do you know I know? His head is vast and crystalline, very nice really. Easier to think. Women.... No compact generalization forms in his mind, only a few speaking ;f faces on a matrix of pervasive irrelevance. Human, of course. Biological necessity. Only so, so . . . diffuse? Pointless? . . . His sister Amy, soprano con tremolo: `50f course women could contribute as much as men if you'd treat us as equals. You'll see!" And then marrying that idiot the second time. Well, now he., can see.

"Kudzu vines," he says aloud. Connie smiles. How they all smile.

"How 'boot that?" Bud says happily. "Ever think j we'd see chicks in zero gee, hey, Dave? Artits-stico. Woo-ee!" Across the cabin Dave's bearded head turns to him, not smiling.

"And of Andy's had it all to his self. Stunt your, growth, lad." He punches Andy genially on the arm, Andy catches himself on the bulkhead. But can't be drunk, Lorimer thinks; not on that fruit cider. But he

doesn't usually sound so much like a stage Texan either. A drug.

"Hey, no offense," Bud is saying earnestly to the boy, "I mean that. You have to forgive one underprilly, underprivileged, brother. These chicks are good people. Know what?" he tells the girl, "You could look stupendous if you fix yourself up a speck. Hey, I can show you, old Buddy's a expert. I hope you don't mind my saying that. As a matter of fact you look real stupendous to me right now."

He hugs her shoulders, flings out his arm and hugs Andy too. They float upward in his grasp, Judy grinning excitedly, almost pretty.

"Let's get some more of that good stuff." Bud propels them both toward the serving rack which is decorated for the occasion with sprays of greens and small real daisies.

"Happy New Year! Hey, Happy New Year, y'all!"

Faces turn, more smiles. Genuine smiles, Lorimer thinks, maybe they really like their new years. He feels he has infinite time to examine every event, the implications evolving in crystal facets. I'm an echo chamber. Enjoyable, to be the observer. But others are observing too. They've started something here. Do they realize? So vulnerable, three of us, five of them in this fragile ship. They don't know. A dread unconnected to action lurks behind his mind.

"By god we made it," Bud laughs. "You space chickies, I have to give it to you. I commend you, by god I say it. We wouldn't be here, wherever we are. Know what, I jus' might decide to stay in the service after all. Think they have room for old Bud in your space program, sweetie?"

"Knock that off, Bud," Dave says quietly from the far wall. "I don't want to hear us use the name of the Creator like that." The full chestnut beard gives him a patriarchal gravity. Dave is forty-six, a decade older than Bud and Lorimer. Veteran of six successful missions.

"Oh my apologies, Major Dave old buddy." Bud chuckles intimately to the girl. "Our commanding ossifer. Stupendous guy. Hey, Doc!" he calls. "How's your attitude? You making out dinko?"

"Cheers," Lorimer hears his voice reply, the complex stratum of his feelings about Bud rising like a kraken in the moonlight of his mind. The submerged silent thing he has about them all, all the Buds and Daves and big, indomitable, cheerful, able, disciplined, slow-minded mesomorphs he has cast his life with. Meso-ectos, he corrected himself; astronauts aren't muscleheads. They like him, he has been careful about that. Liked him well enough to get him on Sunbird, to make him the official scientist on the first circumsolar mission. That little Doc Lorimer, he's cool, he's on the team. No shit from Lorimer, not like those other scientific assholes. He does the bit well with his small neat build and his deadpan remarks. And the years of turning out for the bowling, the volleyball, the tennis, the skeet, the skiing that broke his ankle, the touch football that broke his collarbone. Watch that Doc, he's a sneaky one. And the big men banging him on the back, accepting him. Their token scientist . . . The trouble is, he isn't any kind of scientist any more. Living off his postdoctoral plasma work, a lucky hit. He hasn't really been into the math for years, he isn't up to it now. Too many other interests, too much time spent explaining elementary stuff. I'm a half-jock, he thinks. A foot taller and a hundred pounds heavier and I'd be just like them. One of them. An alpha. They probably sense it underneath, the beta bile. Had the jokes worn a shade thin in Sunbird, all that year going out? A year of Bud and Dave playing gin. That damn exercycle, gearing it up too tough for me. They didn't mean it, though. We were a team.

The memory of gaping jeans flicks at him, the painful end part the grinning faces waiting for him when he stumbled out. The howls, the dribble down his leg. Being cool, pretending to laugh too. You shit heads, I'll show you. I am not a girl.

Bud's voice rings out, chanting "And a hap-pee New Year to you all down there!" Parody of the oily NASA

tone. "Hey, why don't we shoot'em a signal? Greetings to all you Earthlings, I mean, all you little Lunies. Hap-py New Year in the good year whatsis." He snuffles comically. "There is a Santy Claus, Houston, ye-ew nevah saw nothin' like this!Houston , wherever you are," he sings out. "Hey,Houston ! Do you read?"

In the silence Lorimer sees Dave's face set into Major Norman Davis, commanding.

And without warning he is suddenly back there, back a year ago in the cramped, shook-up command module of Sunbird, coming out from behind the sun. It's the drug doing this, he thinks as memory closes around him, it's so real. Stop. He tries to hang onto reality, to the sense of trouble building underneath.

-But he can't, he is there, hovering behind Dave and Bud in the triple couches, as usual avoiding his official station in the middle, seeing beside them their reflections against blackness in the useless port window. The outer layer has been annealed, he can just make out a bright smear that has to be Spica floating through the image of Dave's head, making the bandage look like a kid's crown.

"Houston,Houston , Sunbird," Dave repeats; "Sunbird callingHouston .Houston , do you read? Come in,Houston ."

The minutes start by. They are giving it seven out, seven back; seventy-eight million miles, ample margin.

"The high gain's shot, that's what it is," Bud says cheerfully. He says it almost every day.

"No way." Dave's voice is patient, also as usual. "It checks out. Still too much crap from the sun, isn't that right, Doc?"

"The residual radiation from the flare is just about in line with us," Lorimer says. "They could have a hard time sorting us out." For the thousandth time he registers his own faint, ridiculous gratification at being consulted.

"Shit, we're outside Mercury." Bud shakes his head. "How we gonna find out who won the Series?"

He often says that too. A ritual, out here in

eternal night. Lorimer watches the sparkle of Spica drift by the reflection of Bud's curly face-bush. His own whiskers are scant and scraggly, like a blond Fu Manchu. In the aft corner of the window is a striped glare that must be the remains of their port energy accumulators, fried off in the solar explosion that hit them a month ago and fused the outer layers of their windows. That was when Dave cut his head open on the sexlogic panel. Lorimer had been banged in among the gravity wave experiment, he still doesn't trust the readings. Luckily the particle stream has missed one piece of the front window; they still have about twenty degrees of clear vision straight ahead. The brilliant web of the Pleiades shows there, running off into a blur of light.

Twelve minutes . . . thirteen. The speaker sighs and clicks emptily. Fourteen. Nothing.

"Sunbird toHouston , Sunbird toHouston . Come in,Houston . Sunbird out." Dave puts the mike back in its holder. "Give it another twenty-four."

They wait ritually. Tomorrow Packard will reply Maybe.

"Be good to see old Earth again," Bud remarks.

"We're not using any more fuel on attitude," Dave reminds him. "I trust Doc's figures."

It's not my figures, it's the elementary facts of celestial mechanics, Lorimer thinks; in October there's only one place for Earth to be. He never says it. Not to a man who can fly two-body solutions by intuition once he knows where the bodies are. Bud is a good pilot and a better engineer; Dave is the best there is. He takes no pride in it. "The Lord helps us, Doc, if we let Him."

"Going to be a bitch docking if the radar's screwed up," Bud says idly. They all think about that for the hundredth time. It will be a bitch. Dave will do it. That was why he is hoarding fuel.

The minutes tick off.

"That's it," Dave says-and a voice fills the cabin, shockingly.

"Judy?" It is high and clear. A girl's voice.

"Judy, I'm so glad we got you. What are you doing on this band?"

Bud blows out his breath; there is a frozen instant before Dave snatches up the mike.

"Sunbird, we read you. This is Mission Sunbird calling Houston, ah, Sunbird One calling Houston Ground Control. Identify, who are you? Can you relay our signal? Over."

"Some skip," Bud says. "Some incredible ham."

"Are you in trouble, Judy?" the girl's voice asks. "I can't hear, you sound terrible. Wait a minute."

"This is United States Space Mission Sunbird One," Dave repeats. "Mission Sunbird calling Houston Space Center. You are dee-exxing our channel. Identify, repeat identify yourself and say if you can relay to Houston. Over."

"Dinko, Judy, try it again," the girl says .

Lorimer abruptly pushes himself up to the Lurp, the Long-Range Particle Density Cumulator experiment, and activates its shaft motor. The shaft whines, jars; lucky it was retracted during the flare, lucky it hasn't fused shut. He sets the probe pulse on mar and begins a rough manual scan.

"You are intercepting official traffic from the United States space mission to Houston Control," Dave is saying forcefully. "If you cannot relay to Houston get off the air, you are committing a federal offense. Say again, can you relay our signal to Houston Space Center? Over."

"You still sound terrible," the girl says. "What's Houston? Who's talking, anyway? You know we don't have much time." Her voice is sweet but very nasal.

"Jesus, that's close," Bud says. "That is close."

"Hold it." Dave twists around to Lorimer's improvised radarscope.

"There." Lorimer points out a tiny stable peak at the extreme edge of the read-out slot, in the transcoronal scatter. Bud cranes too.

"A bogey!"

"Somebody else out here."

"Hello, hello? We have you now," the girl says.

"Why are you so far out? Are you dinko, did you catch the flare?"

"Hold it," warns Dave. "What's the status, Doc?"

"Over three hundred thousand kilometers, guesstimated. Possibly headed away from us, going around the sun. Could be cosmonauts, a Soviet mission?"

"Out to beat us. They missed."

"With a girl?" Bud objects.

'They've done that. You taping this, Bud?'

"Roger-r-r." He grins. "That sure didn't sound like a Russky chic. Who the hell's Judy?"

Dave thinks for a second, clicks on the mike. "This is Major Norman Davis commanding Unhed States spacecraft Sunbird One. We have you on scope. Request you identify yourself. Repeat, who are you? Over."

"Judy, stop joking," the voice complains. "We'll lose you in a minute, don't you realize we worried about you?"

"Sunbird to unidentified craft. This is not Judy. I say again, this is not Judy. Who are you? Over."

"What---2' the girl says, and is cut off by someone else saying, "Wait a minute, Ann." The speaker squeals. Then a different woman says, "This is Loma Bethune in Escondita. What is going on here?"

"This is Major Davis commanding United States Mission Sunbird on course for Earth. We do not recognize any spacecraft Escondita. Will you identify yourself? Over."

"I just did." She sounds older, with the same nasal drawl. "There is no spaceship Sunbird and you're not on course for Earth. If this is an andy joke it isn't any good."

"This is no joke, madam!" Dave explodes. "This is the American circumsolar mission and we are American astronauts. We do not appreciate your interference. Out."

The woman starts to speak and is drowned in a jibber of, static. Two voices come through briefly. Lorimer tinks he hears the words "Sunbird program"

and something else. Bud works the squelcher; the interference subsides to a drone.

"Ali, Major Davis?" the voice is fainter. "Did I hear you say you are on course for Earth?"

Dave frowns at the speaker and then says curtly, "Affirmative."

"Well, we don't understand your orbit. You must have very unusual flight characteristics, our readings show you won't node with anything on your present course. We'll lose the signal in a minute or two. Ali, would you tell us where you see Earth now? Never mind the coordinates, just tell us the constellation."

Dave hesitates and then holds up the mike. "Doc."

"Earth's apparent position is in Pisces," Lorimer says to the voice. "Approximately three degrees from P. Gamma."

"It is not," the woman says. "Can't you see it's in Virgo? Can't you see out at all?"

Lorimer's eyes go to the bright smear in the port window. "We sustained some damage-"

"Hold it," snaps Dave.

"-to one window during a disturbance we ran into at perihelion. Naturally we know the relative direction of Earth on this date, October nineteen."

"October? It's March, March fifteen. You must--!" Her voice is lost in a shriek.

"E-M front," Bud says, tuning. They are all leaning at the speaker from different angles, Lorimer is headdown. Space-noise wails and crashes like surf, the strange ship is too close to the coronal horizon. "-Behind you," they hear. More howls. "Band, try .

ship . . . if you can, you signal-" Nothing more comes through.

Lorimer pushes back, staring at the spark in the window. It has to be Spica. But is it elongated, as if a second point-source is beside it? Impossible. An excitement is trying to flare out inside him, the women's voices resonate in his head.

"Playback," Dave says. "Houston will really like to hear this."

They listen again to the girl calling Judy, the woman

saying she is Loma Bethune. Bud holds up a finger. "Man's voice in there." Lorimer listens hard for the words he thought he heard. The tape ends.

"Wait till Packard gets this one." Dave rubs his arms. "Remember what they pulled on Howie? Claiming they rescued him."

"Seems like they want us on their frequency." Bud grins. "They must think we're fa-a-ar gone. Hey, looks like this other capsule's going to show up, getting crowded out here."

"If it shows up," Dave says. "Leave it on voice alert, Bud. The batteries will do that."

Lorimer watches the spark of Spica, or Spica-plussomething, wondering if he will ever understand. The casual acceptance of some trick or ploy out here in this incredible loneliness. Well, if these strangers are from the same mold, maybe that is it. Aloud he says, "Escondita is an odd name for a Soviet mission. I believe it means 'hidden' in Spanish."

"Yeah," says Bud. "Hey, I know what that accent is, it's Australian. We had some Aussie bunnies at Hickman. Or-stryle-ya, woo-ee! You s'pose Woomara, is sending up some kind of com-bined do?"

Dave shakes his head. "They have no capability,; whatsoever."

"We ran into some fairly strange phenomena back there, Dave," Lorimer says thoughtfully. "I'm beginning to wish we could take a visual check."

"Did you goof, Doc?"

"No. Earth is where I said, if it's October. Virgo is where it would appear in March."

"Then that's it," Dave grins, pushing out of the couch. "You been asleep five months, Rip van Winkle? Time for a hand before we do the roadwork."

"What I'd like to know is what that chick looks like," says Bud, closing down the transceiver. "Can I help you into your space-suit, Miss? Hey, Miss, pull that in, Asst-psst-psst! You going to listen, Doc?"

"Right." Lorimer is getting out his charts. The others go aft through the tunnel to the small day room, making no further comment on the presence of

the strange ship or ships out here. Lorimer himself is more shaken than he likes; it was that damn phrase.

The tedious exercise period comes and goes. Lunchtime: They give the containers a minimum warm to conserve the batteries. Chicken AL la king again; Bud puts ketchup on his and breaks their usual silence with a funny anecdote about an Australian girl, laboriously censoring himself to conform to Sunbird's unwritten code on talk. After lunch Dave goes forward to the command module. Bud and Lorimer continue their current task checking out the suits and packs for a damage-assessment EVA to take place as soon as the radiation count drops.

They are just clearing away when Dave calls them. Lorimer comes through the tunnel to hear a girl's voice blare, "-dinko trip. What did Loma say? Gloria over!"

He starts up the Lurp and begins scanning. No results this time. "They're either in line behind us or in the sunward quadrant," he reports finally. "I can't isolate them."

Presently the speaker holds another thin thread of sound.

"That could be their ground control," says Dave. "How's the horizon, Doc?"

"Five hours; Northwest Siberia, Japan, Australia."

"I told you the high gain is fucked up." Bud gingerly feeds power to his antenna motor. "Easy, eas-ee. The frame is twisted, that's what it is:"

"Don't snap it," Dave says, knowing Bud will not.

The squeaking fades, pulses back. "Hey, we can really use this," Bud says. "We can calibrate on them."

A hard soprano says suddenly "-should be outside your orbit. Try around Beta Aries."

"Another chick. We have a fix," Bud says happily. "We have a fix now. I do believe our troubles are over. That monkey was torqued one hundred forty-nine degrees. Woo-ee!"

The first girl comes back. "We seen them, Margo! But they're so small, how can they live in there? Maybe they're tiny aliens! Over."

"That's Judy." Bud chuckles. "Dave, this is screwy; it's all in English. It has to be some U.N. thingie."

Dave massages his elbows, flexes his fists; thinking.; They wait. Lorimer considers a hundred and forty-nine degrees from Gamma Piscium.

In thirteen minutes the voice from Earth says, "Judy; call the others, will you? We're going to play you the conversation, we think you should all hear. Two min--utes. Oh, while we're waiting, Zebra wants to

tell Connie the baby is fine. And we have a new cow."

"Code," says Dave.

The recording comes on. The three men listen once -j more to Dave calling Houston in a rattle of solar noise. The transmission clears up rapidly and cuts off with the woman saying that another ship, the Gloria, is behind them, closer to the sun.

"We looked up history," the Earth voice resumes. j "There was a Major Norman Davis on the first Sunbird flight. Major was a military title. Did you hear then= say 'Doc'? There was a scientific doctor on board,. Doctor Orren Lorimer. The third member was Captain-that's another title-Bernhard Geirr. Just the: three of them, all males of course. We think they had an early reaction engine and not too much fuel. The point is, the first Sunbird mission was lost in space. They never came out from behind the sun. That was about when the big flares started. Jan thinks they must have been close to one, you heard them say they were damaged."

Dave grunts. Lorimer is fighting excitement like a .. brush discharge sparking in his gut.

"Either they are who they say they are or they're" ghosts; or they're aliens pretending to be people. Jan says maybe the disruption in those super-flares could: collapse the local time dimension. Pluggo. What did, you observe there, I mean the highlights?"

Time dimension. . . never came back . . . Lorimer's mind narrows onto the reality of the two unmoving; bearded heads before him, refuses to admit the words he thought he heard: Before the year two thousand.

The language, he thinks. The language would have to have changed. He feels better.

A deep baritone voice says, "Margo?" In Sunbird eyes come alert.

"-like the big one fifty years ago." The man has the accent too. "We were really lucky 'being right there when it-popped. The most interesting part is that we confirmed the gravity turbulence. Periodic but not waves. It's violent, we got pushed around some. Space is under monster stress in those things. We think France 's theory that our system is passing through a micro-black-hole cluster looks right. So long as one doesn't plonk us."

"France?" Bud mutters. Dave looks at him speculatively.

"It's hard to imagine anything being kicked out in time. But they're here, whatever they are, they're over eight hundred kays outside us scooting out toward Aldebaran. As Loma said, if they're trying to reach Earth they're in trouble unless they have a lot of spare gees. Should we try to talk to them? Over. Oh, great about the cow. Over again."

"Black holes." Bud whistles softly. "That's one for you, Doc. Was we in a black hole?"

"Not in one or we wouldn't be here." If we are here, Lorimer adds to himself. A micro-black-hole cluster . . . what happens when fragments of totally collapsed matter approach each other, or collide, say in the photosphere of a star? Time disruption? Stop it. Aloud he says, "They could be telling us something Dave."

Dave says nothing. The minutes pass.

Finally the Earth voce comes back, saying that it will try to contact the strangers on their original frequency. Bud glances at Dave, tunes the selector.

"Calling Sunbird One?" the girl says slowly through her nose. "This is Luna Central calling Major Norman Davis of Sunbird One. We have picked up your conversation with our ship Escondita. We are very puzzled as to who you are and how you got there. If you really are Sunbird One we think you must have been

jumped forward in time when you passed the solar: flare." She pronounces it Cockney-style, "toime."

"Our ship Gloria is near you, they see you on their 1
radar. We think you may have a serious course problem.
because you told Lorna you were headed for Earth and

you think it is now October with Earth in Pisces. It
is not October, it is March fifteen. I repeat, the Earth _
date"-she says "dyte "is March fifteen, time twenty,
hundred hours. You should be able to see Earth very .
close to Spica in Virgo. You said your window is
damaged. Can't you go out and look? We think you:
have to make a big course correction. Do you have-"
enough fuel? Do you have a computer? Do you have
enough air and water and food? Can we help you?
We're listening on this frequency. Luna to Sunbird,
One, come in."

On Sunbird nobody stirs. Lorimer struggles against internal eruptions. Never came back. Jumped
forward; in time. The cyst of memories he has schooled himself to suppress bulges up in the lengthening
silence. "Aren't, you going to answer?"

"Don't be stupid," Dave says.

"Dave. A hundred and forty-nine degrees is the difference between Gamma Piscium and Spica. That',
transmission is coming from where they say Earth is.";

"You goofed."

"I did not goof. It has to be March."

Dave blinks as if a fly is bothering him.

In fifteen minutes the Luna voice runs through the whole thing again, ending "Please, come in."

"Not a tape." Bud unwraps a stick of gum, adding the plastic to the neat wad back of the gyro leads. Lorimer's skin crawls, watching the ambiguous dazzle of Spica. Spica-plus-Earth? Unbelief grips him, rocks him with a complex pang compounded of faces, voices, the sizzle of bacon frying, the creak of his father's wheelchair, chalk on a sunlit blackboard, Ginny's bare legs on the flowered couch, Jenny and Penny running dangerously close to the lawnmower. The girls, will be taller now, Jenny is already as tall as her mother. His father is living with Amy in Denver, determined to last

till his son gets home. When I get home. This has to be insanity, Dave's right; it's a trick, some crazy trick. The language.

Fifteen minutes more; the flat, earnest female voice comes back and repeats it all, putting in more stresses. Dave wears a remote frown, like a man listening to a lousy sports program. Lorimer has the notion he might switch off and propose a hand of gin; wills him to do so. The voice says it will now change frequencies.

Bud tunes back, chewing calmly. This time the voice stumbles on a couple of phrases. It sounds tired.

Another wait; an hour, now. Lorimer's mind holds only the bright point of Spica digging at him. Bud hums a bar of "Yellow Ribbons," falls silent again.

"Dave," Lorimer says finally, "our antenna is pointed straight at Spica. I don't care if you think I goofed, if Earth is over there we have to change course soon. Look, you can see it could be a double light source. We have to check this out."

Dave says nothing. Bud says nothing but his eyes rove to the port window, back to his instrument panel, to the window again. In the corner of the panel is a polaroid snap of his wife. Patty: a tall, giggling, rump-switching red-head; Lorimer has occasional fantasies about her. Little-girl voice, though. And so tall. . . . Some short men chase tall women; it strikes Lorimer as undignified. Ginny is an inch shorter than he. Their girls will be taller. And Ginny insisted on starting a pregnancy before he left, even though he'll be out of commo. Maybe, maybe a boy, a son-stop it. Think about anything. Bud. . . . Does Bud love Patty? Who knows? He loves Ginny. At seventy million miles

"Judy?" Luna Central or whoever it is says. "They don't answer. You want to try? But listen, we've been thinking. If these people really are from the past this must be very traumatic for them. They could be just realizing they'll never see their world again. Myda says these males had children and women they stayed

with, they'll miss them terribly. This is exciting for us but it may seem awful to them. They could be too

shocked to answer. They could be frightened, maybe they think we're aliens or hallucinations even. See?"

Five seconds later the nearby girl says, "Da, Margo, we were into that too. Dinko. Ah, Sunbird? Major Davis of Sunbird, are you there? This is Judy Paris in the ship Gloria, we're only About a million kay from you, we see you on our screen." She sounds young and excited. "Luna Central has been trying to reach you, we think you're in trouble and we want to help. Please don't be frightened, we're people just j like you. We think you're way off course if you want to reach Earth. Are you in trouble? Can we help? If x your radio is out can you make any sort of signal? Do you know Old Morse? You'll be off our screen R soon, we're truly worried about you. Please reply somehow if you possibly can, Sunbird, come in!"

Dave sits impassive. Bud glances at him, at the port

window, gazes stolidly at the speaker, his face blank.:

Lorimer has exhausted surprise, he wants only to reply 'to to the

voices. He can manage a rough signal by

heterodyning the probe beam. But what then, with them both against him?

The girl's voice tries again determinedly. Finally she says, "Margo, they won't peep. Maybe they're dead? I think they're aliens."

Are we not? Lorimer thinks. The Luna station: comes back with a different, older voice.

"Judy, Myda here, I've-had another thought. These people had a very rigid authority code. You remember your history, they peck ordered everything. You notice . _ Major Davis repeated about being commanding. That's called dominance-submission structure, one of them gave orders and the others did whatever they were told, we don't know quite why. Perhaps they were 1 frightened. The point is that if the dominant one is in shock or panicked maybe the others can't reply unless thisDavis lets them."

Jesus Christ, Lorimer thinks. Jesus H. Christ in colors. It is his father's expression for the inexpressible. Dave and Bud sit unstirring.

"How 'weird," the Judy voice says. "But don't they

know they're on a bad course? I mean, could the dominant one make the others fly right out of the system? Truly?"

It's happened, Lorimer thinks; it has happened. I have to stop this. I have to act now, before they lose us. Desperate visions of himself defying Dave and Bud loom before him. Try persuasion first.

Just as he opens his mouth he sees Bud stir slightly, and with immeasurable gratitude hears him say, "Dave-o, what say we take an eyeball look? One little old burp won't hurt us."

Dave's head turns a degree or two.

"Or should I go out and see, like the chick said?" Bud's voice is mild.

After a long minute Dave says neutrally, "All right.

. . . Attitude change." His arm moves up as though heavy; he starts methodically setting in the values for the vector that will bring Spica in line with their functional window.

Now why couldn't I have done that, Lorimer asks himself for the thousandth time, following the familiar check sequence. Don't answer. . . . And for the thousandth time he is obscurely moved by the rightness of them. The authentic ones, the alphas. Their bond. The awe he had felt first for the absurd jocks of his school

ball team. `

"That's go, Dave, assuming nothing got creamed."

Dave throws the ignition safety, puts the computer on real time. The hull shudders. Everything in the cabin drifts sidewise while the bright point of Spica swims the other way, appears on the front window as the retros cut in. When the star creeps out onto clear glass Lorimer can clearly see its companion. The double light steadies there; a beautiful job. He hands Bud the telescope.

"The one on the left."

Bud looks. "There she is, all right. Hey, Dave, look at that!"

He puts the scope in Dave's hand. Slowly, Dave raises it and looks. Lorimer can hear him breathe. Suddenly Dave pulls up the mike.

"Houston!" he shouts harshly. "Sunbird toHouston , Sunbird callingHouston !Houston , come in!"

Into the silence the speaker squeals, "They fired their engines-wait, she's calling!" And shuts up.

In Sunbird's cabin nobody speaks. Lorimer stares at the twin stars ahead, impossible realities shifting around him as the minutes congeal. Bud's reflected face looks downwards, grin gone. Dave's beard moves silently; praying, Lorimer realizes. Alone of the crew Dave is deeply religious. At Sunday meals he gives a short, dignified grace. A shocking pity for Dave rises in Lorimer; Dave is so deeply involved with his family, his four sons, . always thinking about their training, taking them hunting, fishing, camping. And Doris his wife so incredibly active and sweet, going on their trips, cooking and doing things for the community. Driving Penny and Jenny to classes while Ginny was sick that time. Good people, the backbone . . . This can't be, he thinks; Packard's voice is going to come through in a minute, the antenna's beamed right now. Six minutes now. This will all go away . . . Before the year two thousand-stop it, the language would have changed. Think ofDoris She has that glow, feeding her five men; women with sons are different. But Ginny, but his dear woman, his wife, his daughters -grandmothers now? All dead and dust? Quit that. -Dave is still praying . . . Who knows what goes on inside those heads? Dave's cry . . . Twelve minutes, it has to be all right. The second sweep is stuck, no, it's moving. Thirteen. It's all insane, a dream. Thirteen plus . . . fourteen. The speaker hissing and clicking

vacantly. Fifteen now. A dream. . . . Or are those women staying off, letting us see? Sixteen

At twenty Dave's hand moves, stops again. The seconds jitter by, space crackles. Thirty minutes coming up.

"Calling Major Davis in Sunbird?" It is the older woman, a gentle voice. "This is Luna Central. We are the service and communication facility for space flight now. We're sorry to have to tell you that there is no space center at Houston any more. Houston itself was abandoned when the shuttle base moved to White Sands, over two centuries ago." "

A cool dust-colored light enfolds Lorimer's brain, isolating it. It will remain so a long time.

The woman is explaining it all again, offering help, asking if they were hurt. A nice dignified speech. Dave still sits immobile, gazing at Earth. Bud puts the mike in his hand.

"Tell them, Dave-o."

Dave looks at it, takes a deep breath, presses the send button.

"Sunbird to Luna Control," he says quite normally. (It's "Central," Lorimer thinks.) "We copy. Ah, negative on life support, we have no problems. We copy the course change suggestion and are proceeding to recompute. Your offer of computer assistance is appreciated. We suggest you transmit position data so we can get squared away. Ah, we are economizing on transmission until we see how our accumulators have held up. Sunbird out."

And so it had begun.

Lorimer's mind floats back to himself now floating in Gloria, nearly a year, or three hundred years, later; watching and being watched by them. He still feels light, contented; the dread underneath has come no

nearer. But it is so silent. He seems to have heard no voices for a long time. Or was it a long time? Maybe the drug is working on his time sense, maybe it was only a minute or two.

"I've been remembering," he says to the woman Connie, wanting her to speak.

She nods. "You have so much to remember. Oh, I'm sorry-that wasn't good to say." Her eyes speak sympathy.

"Never mind." It is all dreamlike now, his lost world and this other which he is just now seeing plain. "We must seem like very strange beasts to you."

"We're trying to understand," she says. "It's history, you learn the events but you don't really feel

what people were like, how it was for them. We hope you'll tell us."

The drug, Lorimer thinks, that's what they're trying. Tell them . . . how can he? Could a dinosaur tell how it was? A montage flows through his mind, dominated by random shots of Operations' north parking lot and Ginny's yellow kitchen telephone with the sickly ivy vines Women and vines

A burst of laughter distracts him. It's coming from the chamber they call the gym, Bud and the others must be playing ball in there. Bright idea, really, he muses: Using muscle power, sustained mild exercise. That's why they are all so fit. The gym is a glorified squirrel-wheel, when you climb or pedal up the walls it revolves and winds a gear train, which among other things rotates the sleeping drum. A real Woolagong . . . Bud and Dave usually take their shifts together, scrambling the spinning gym like big pale apes. Lorimer prefers the easy rhythm of the women, and the cycle here fits him nicely. He usually puts in his shift with Connie, who doesn't talk much, and one of the Judys, who do.

No one is talking now, though. Remotely uneasy he looks around the big cylinder of the cabin, sees Dave and Lady Blue by the forward window. Judy Dakar is behind them, silent for once. They must be looking at Earth; it has been a beautiful expanding disk for some weeks now. Dave's beard is moving, he is praying again. He has taken to doing that, not ostentatiously, but so obviously sincere that Lorimer, a life atheist, can only sympathize.

The Judys have asked Dave what he whispers, of course. When Dave understood that they had no concept of prayer and had never seen a Christian Bible there had been a heavy silence.

"So you have lost all faith," he said finally.

"We have faith," Judy Paris protested.

"May I ask in what?"

"We have faith in ourselves, of course," she told him.

"Young lady, if you were my daughter I'd tan your
britches," Dave said, not joking. The subject was not raised again.

But he came back so well after that first dreadful shock, Lorimer thinks. A personal god, a father-model, man needs that. Dave draws strength from it and we lean on him. Maybe leaders have to believe. Dave was so great; cheerful, unflappable, patiently, working out alternatives, making his decisions on the inevitable discrepancies in the position readings in a way Lorimer couldn't do. A bitch. . . .

Memory takes him again; he is once again back in Sunbird, gritty eyed, listening to the women's chatter, Dave's terse replies. God, how they chattered. But their computer work checks out. Lorimer is suffering also from a quirk of Dave's, his reluctance to transmit their exact thrust and fuel reserve. He keeps holding out a margin and making Lorimer compute it back in.

But the margins don't help; it is soon clear that they are in big trouble. Earth will pass too far ahead of them on her next orbit, they don't have the acceleration to catch up with her before they cross her path. They can carry out an ullage maneuver, they can kill enough velocity to let Earth catch them on the second go-by; but that would take an extra year and their life-support would be long gone. The grim question of whether they have enough. to enable a single man to wait it out pushes into Lorimer's mind. He pushes it back; that one is for Dave.

There is a final possibility: Venus will approach their trajectory three months hence and they may be able

to gain velocity by swinging by it. They go to work on that.

Meanwhile Earth is steadily drawing away from them and so- is Gloria, closer toward the sun. They pick her out of the solar interference and then lose her again. They know her crew now: the man is Andy Kay, the senior woman is Lady Blue Parks; they appear to do the navigating. Then there is a Connie Morelos and the two twins, Judy Paris and Judy Dakar, who run the communications. The chief Luna voices are women too, Margo and Azella. The men

can hear them talking to the Escondita which is now swinging in toward the far side of the sun. Dave insists on monitoring and taping everything that comes through. It proves to be largely replays of their exchanges with Luna and Gloria, mixed with a variety of highly personal messages. As references to cows, chickens, and other livestock multiply Dave reluctantly gives up his idea that they are code. Bud counts a total of five male voices.

"Big deal," he says. "There were more chick drivers on the road when we left. Means space is safe now, the girlies have taken over. Let them sweat their little asses off." He chuckles. "When we get this bird down, the stars ain't gonna study old Buddy no more, no ma'm. A nice beach and about a zillion steaks and ale and all those sweet things. Hey, we'll be living history, we can charge admission."

Dave's face takes on the expression that means an inappropriate topic has been breached. Much to Lorimer's impatience, Dave discourages all speculation as to what may await them on this future Earth. He confines their transmissions strictly to the problem in hand; when Lorimer tries to get him at least to mention the unchanged-language puzzle Dave only says firmly, "Later." Lorimer fumes; inconceivable that he is three centuries in the future, unable to learn a thing.

They do glean a few facts from the women's talk. There have been nine successful Sunbird missions after theirs and one other casualty. And the Gloria and her sister ship are on a long-planned fly-by of the two inner planets.

"We always go along in pairs," Judy says. "But those planets are no good. Still, it was worth seeing."

"For Pete's sake, Dave, ask them how many planets have been visited," Lorimer pleads.

"Later."

But about the fifth meal-break Luna suddenly volunteers.

"Earth is making up a history for you, Sunbird," the Margo voice says. "We know you don't want to waste power asking so we thought we'd send you a

few main points right now." She laughs. "It's much harder than we thought, nobody here does history."

Lorimer nods to himself; he has been wondering what he could tell a man from 1690 who would want to know what happened to Cromwell-was Cromwell then?-and who had never heard of electricity, atoms, or the U.S.A.

"Let's see, probably the most important is that there aren't as many people as you had, we're just over two million. There was a world epidemic not long after your time. It didn't kill people but it reduced the population. I mean there weren't any babies in most of the world. Ah, sterility. The country called Australia was affected least." Bud holds up a finger.

"And North Canada wasn't too bad. So the survivors all got together in the south part of the American states where they could grow food and the best communications and factories were. Nobody lives in the rest of the world but we travel there sometimes. Ah, we have five main activities, was 'industries' the word? Food, that's farming and fishing. Communications, transport, and space-that's us. And the factories they need. We live a lot simpler than you did, I think. We see your things all over, we're very grateful to you. Oh, you'll be interested to know we use zeppelins just like you did, we have six big ones. And our fifth thing is the children. Babies. Does that help? I'm using a children's book we have here."

The men have frozen during this recital; Lorimer is holding a cooling bag of hash. Bud starts chewing again and chokes.

"Two million people and a space capability?" He coughs. "That's incredible."

Dave gazes reflectively at the speaker. "There's a lot they're not telling us."

"I gotta ask them," Bud says. "Okay?"

Dave nods. "Watch it."

"Thanks for the history, Luna," Bud says. "We really appreciate it. But we can't figure out how you maintain a space program with only a couple of million people. Can you tell us a little more on that?"

In the pause Lorimer tries to grasp the staggering figures. From eight billion to two million . . . Europe, Asia, Africa, South America, America itself-wiped out. There weren't any more babies. World sterility, from what? The Black Death, the famines of Asia those had been decimations. This is magnitudes worse. No, it is all the same: beyond comprehension. An empty world, littered with junk.

"Sunbird?" says Margo. "Da, I should have thought you'd want to know about space. Well, we have only the four real spaceships and one building. You know the two here. Then there's Indira and Pech, they're on the Mars run now. Maybe the Mars dome was since your day. You had the satellite stations though, didn't you? And the old Luna dome, of course-I remember now, it was during the epidemic. They tried to set up colonies to, ah, breed children, but the epidemic got there too. They struggled terribly hard. We owe a lot to you really, you men I mean. The history has it all, how you worked out a minimal viable program and trained everybody and saved it from the crazies. It was a glorious achievement. Oh, the marker here has one of your names on it. Lorimer. We love to keep it all going and growing, we all love traveling. Man is a rover, that's one of our mottoes."

"Are you hearing, what I'm hearing?" Bud asks, blinking comically.

Dave is still staring at the speaker. "Not one word about their government," he says slowly. "Not a word about economic conditions. We're talking to a bunch of monkeys."

"Should I ask them?"

"Wait a minute . . . Roger, ask the name of their chief of state and the head of the space program. And -no, that's all."

"President?" Margo echoes Bud's query. "You mean like queens and kings? Wait, here's Myda. She's been talking about you with Earth."

The older woman they hear occasionally says, "Sunbird? Da, we realize you had a very complex activity, your governments. With so few people we don't have

that type of formal structure at all. People from the different activities meet periodically and our communications are good, everyone is kept informed. The people in each activity are in charge of doing it while they're there. We rotate, you see. Mostly in five-year hitches; for example, Margo here was on the zeppelins and I've been on several factories and farms and of course the, well, the education, we all do that. I believe that's one big difference from you. And of course we all work. And things are basically far more stable now, I gather. We change slowly. Does that answer you? Of course you can always ask Registry, they keep track of us all. But we can't, ah, take you to our leader, if that's what you mean." She laughs, a genuine, jolly sound. "That's one of our old- jokes. I must say," she goes on seriously, "it's been a joy to us that we can understand you so well. We make a big effort not to let the language drift, it would be tragic to lose touch with the past."

Dave takes the mike. "Thank you, Luna. You've given us something to think about. Sunbird out."

"How much of that is for real, Doc?" Bud rubs his curly head. "They're giving us one of your science fiction stories."

"The real story will come later," says Dave. "Our job is to get there."

"That's a point that doesn't look too good."

By the end of the session it looks worse. No Venus trajectory is any good. Lorimer reruns all the computations; same result.

"There doesn't seem to be any solution to this one, Dave," he says at last. "The parameters are just too tough. I think we've had it."

Dave massages his knuckles thoughtfully. Then he nods. "Roger. We'll fire the optimum sequence on the Earth heading."

"Tell them to wave if they see us go by," says Bud.

They are silent, contemplating the prospect of a slow death in space eighteen months hence. Lorimer wonders if he can raise the other question, the bad

one. He is pretty sure what Dave will say. What will he himself decide, what will he have the guts to do?.

"Hello, Sunbird?" the voice of Gloria breaks in. "Listen, we've been figuring. We think if you use all your fuel you could come back in close enough to our orbit so we could swing out and pick you up. You'd be using solar gravity that way. We have plenty of maneuver but much less acceleration than you do. You have suits and some kind of propellants, don't you? I mean, you could fly across a few kays?"

The three men look at each other; Lorimer guesses, he had not been the only one to speculate on that. -;

"That's a good thought, Gloria," Dave' says. "Let's..

;

hear what Luna says."

"Why?" asks Judy. "It's our business, we wouldn't endanger the ship. We'd only miss another look at Venus, who cares. We have plenty of water and food and if the air gets a little smelly we can stand it."

"Hey, the chicks are all right," Bud says. They wait.

The voice of Luna comes on. "We've been looking at that too, Judy. We're not sure you understand the risk. Ah, Sunbird, excuse me. Judy, if you manage to pick them up you'll have to spend nearly a year in the ship with these three male persons from a very different culture. Myda says you should remember-;' history and it's a risk no matter what Connie says.

Sunbird, I hate to be so rude. Over."

Bud is grinning broadly, they all are. "Cave men," he chuckles. "All the chicks land preggers."

"Margo, they're human beings," the Judy voice protests. "This isn't just Connie, we're all agreed. Andy and Lady Blue say it would be very interesting. If it works, that is. We can't let them go without trying."

"We feel that way too, of course," Luna replies. "But there's another problem. They could be carrying diseases. Sunbird, I know you've been isolated for fourteen months, but Murti says people in your day were immune to organisms that aren't around now. Maybe some of ours could harm you; too. You could all get mortally sick and lose the ship."

"We thought of that, Margo," Judy says impatiently.

"Look, if you have contact with them at all somebody has to test, true? So we're ideal. By the time we get home you'll know. And how could we all get sick so fast we couldn't put Gloria in a stable orbit where you could get her later on?"

They wait. "Hey, what about that epidemic?" Bud pats his hair elaborately. "I don't know if I want a career in gay fib."

"You rather stay out here?" Dave asks.

"Crazies," says a different voice from Luna. "Sunbird, I'm Murti, the health person here. I think what we have to fear most is the meningitis-influenza complex, they mutate so readily. Does your Doctor Lorimer have any suggestions?"

"Roger, I'll put him on," says Dave. "But as to your first point, madam, I want to inform you that at time of takeoff the incidence of rape in the United States space cadre was zero point zero. I guarantee the conduct of my crew provided you can control yours. Here is Doctor Lorimer."

But Lorimer cannot of course tell them anything useful. They discuss the men's polio shots, which luckily have used killed virus, and various childhood diseases which still seem to be around. He does not

mention their epidemic.

"Luna, we're going to try it," Judy declares. "We couldn't live with ourselves. Now let's get the course figured before they get any farther away."

From there on there is no rest on Sunbird while they set up and refigure and rerun the computations for the envelope of possible intersection trajectories. The Gloria's drive, they learn, is indeed low-thrust, although capable of sustained operation. Sunbird will have to get most of the way to the rendezvous on her own if they can cancel their outward velocity.

The tension breaks once during the long session, when Luna calls Gloria to warn Connie to be sure the female crew members wear concealing garments at all times if the men came aboard.

"Not suit-liners, Connie, they're much too tight." It is the older woman, Myda. Bud chuckles.

"Your light sleepers, I think. And when the men unsuit, your Andy is the only one who should help them. You others stay away. The same for all body functions and sleeping. This is very important, Connie; you'll have to watch it the whole way home. There are a great many complicated taboos. I'm putting an instruction list on the bleeper, is your receiver working?"

"Da, we used it for France 's black-hole paper."

"Good. Tell Judy to stand by. Now listen, Connie, listen carefully. Tell Andy he has to read it all. I repeat, he has to read every word. Did you hear that?"

"Ali, dinko," Connie answers. "I understand, Myda. He will."

"I think we just lost the ball game, fellas," Bud, laments. "Old mother Myda took it all away."

Even Dave laughs. But later when the modulated squeal that is a whole text comes through the speaker, he frowns again. "There goes the good stuff."

The last factors are cranked in; the revised program spins, and Luna confirms them. "We have a pay-out, Dave," Lorimer reports. "It's tight but there are at least two viable options. Provided the main jets are fully functional."

"We're going EVA to check."

That is exhausting; they find a warp in the deflector housing of the port engines and spend four sweating hours trying to wrestle, it back. It is only Lorimer's third sight of open space but he is soon too tired to care.

"Best we can do," Dave pants finally. "We'll have to compensate in the psychic mode."

"You can do it, Dave-o," says Bud. "Hey, I gotta change those suit radios, don't let me forget."

In the psychic mode . . . Lorimer surfaces back to his real self, cocooned in Gloria's big cluttered cabin, seeing Connie's living face. It must be hours, how long has he been dreaming?

"About two minutes," Connie smiles.

"I was thinking of the first time I saw you."

"Oh yes. We'll never forget that, ever."

Nor will he . . . He lets it unroll again in his head. The interminable hours after the first long burn, which has sent Sunbird yawing so they all have to gulp nausea pills. Judy's breathless voice reading down their approach: "Oh, very good, four hundred thousand . . . Oh great, Sunbird, you're almost three, you're going to break a hundred for sure-" Dave has done it, the big one.

Lorimer's probe is useless in the yaw, it isn't until they stabilize enough for the final burst that they can see the strange blip bloom and vanish in the slot. Converging, hopefully, on a theoretical near intersection

point.

"Here goes everything."

The final burn changes the yaw into a sickening tumble with the starfield looping past the glass. The pills are no more use and the fuel feed to the attitude jets goes sour. They are all vomiting before they manage to hand-pump the last of the fuel and slow the tumble.

"That's it, Gloria. Come and get us. Lights on, Bud. Let's get those suits up."

Fighting nausea they go through the laborious routine in the fouled cabin. Suddenly Judy's voice sings out, "We see you, Sunbird! We see your light! Can't you see us?"

"No time," Dave says. But Bud, half-suited, points at the window. "Fellas, oh, hey, look at that."

"Father, we thank you," says Dave quietly. "All right, move it on, Doc. Packs."

The effort of getting themselves plus the propulsion units and a couple of cargo nets out of the rolling ship drives everything else out of mind. It isn't until they are floating linked together and stabilized by Dave's hand jet that Lorimer has time to look.

The sun blanks out their left. A few meters below them Sunbird tumbles empty, looking absurdly small. Ahead of them, infinitely far away, is a point too blurred and yellow to be a star. It creeps: Gloria, on her approach tangent.

"Can you start, Sunbird?" says Judy in their, helmets. "We don't want to brake any more on account of our exhaust. We estimate fifty kay in an hour, we're coming out on a line."

"Roger. Give me your jet, Doc."

"Goodbye, Sunbird," says Bud. "Plenty of lead, Dave-o."

Lorimer finds it restful in a childish way, being towed across the abyss tied to the two big men. He has total confidence in Dave, he never considers the possibility that they will miss, sail by and be lost. Does Dave feel contempt? Lorimer wonders; that banked-up silence, is it partly contempt for those who can manipulate only symbols, who have no mastery of matter?

. He concentrates on mastering his stomach.

It is a long, dark trip. Sunbird shrinks to a twinkling light, slowly accelerating on the spiral course that will end her ultimately in the sun with their precious records that are three hundred years obsolete. With, also, the packet of photos and letters that Lorimer has twice put in his suit-pouch and twice taken out. Now and then he catches sight of Gloria, growing from a blur to an incomprehensible tangle of lighted crescents.

"Woo-ee, see there," Bud says. "No wonder they can't accelerate, that thing is a flying trailer park. It'd break up."

"It's a space ship. Got those nets tight, Doc?"

Judy's voice suddenly fills their helmets. "I see your lights! Can you see me? Will you have enough left to brake at all?"

"Affirmative to both, Gloria," says Dave.

At that moment Lorimer is turned slowly forward again and he sees will see it forever: the alien ship in the starfield and on its dark side the tiny lights that are women in the stars, waiting for them. Threeno, four; one suit-light is way out, moving. If that is a tether it must be over a kilometer.

"Hello, I'm Judy Dakar!" The voice is close. "Oh, mother, you're big! Are you all right? How's your air?"

"No problem."

They are in fact stale and steaming wet; too much

adrenalin. Dave uses the jets again and suddenly she is growing, is coming right at them, a silvery spider on a trailing thread. Her suit looks trim and flexible; it is mirror-bright, and the pack is quite small. Marvels of the future, Lorimer thinks; Paragraph One.

"You made it, you made it! Here, tie in. Brake!"

"There ought to be some historic words," Bud murmurs. "If she gives us a chance."

"Hello, Judy," says Dave calmly. "Thanks for coming." .

"Contact!" She blasts their ears. "Haul us in, Andy! Brake, brake the exhaust is back there!"

And they are grabbed hard, deflected into a great arc toward the ship. Dave uses up the last jet. The line loops.

"Don't jerk it," Judy cries. "Oh, I'm sorry." She is clinging on them like a gibbon, Lorimer can see her eyes, her excited mouth. Incredible. "Watch out, it's slack."

"Teach me, honey," says Andy's baritone. Lorimer twists and sees him far back at the end of a heavy tether, hauling them smoothly in. Bud offers to help, is refused. "Just hang loose, please," a matronly voice tells them. It is obvious Andy has done this before. They come in spinning slowly, like space fish. Lorimer finds he can no longer pick out the twinkle that is Sunbird. When he is swung back, Gloria has changed to a disorderly cluster of bulbs and spokes around a big central cylinder. He can see pods and miscellaneous equipment stowed all over her. Not like science fiction.

Andy is paying the line into a floating coil. Another figure floats beside him. They are both quite short, Lorimer realizes as they near.

"Catch the cable," Andy tells them. There is a busy moment of shifting inertial drag.

"Welcome to Gloria, Major Davis, Captain Geirr, Doctor Lorimer. I'm Lady Blue Parks. I think you'll like to get inside as soon as possible. If you feel like climbing go right ahead, we'll pull all this in later."

"We appreciate it, Ma'm."

They start hand-over-hand along the catenary of the

main tether. It has a good rough grip. Judy coasts up to peer at them, smiling broadly, towing the coil. A taller figure waits by the ship's open airlock.

"Hello, I'm Connie. I think we can cycle in two at a time. Will you come with me, Major Davis?"

It's like an emergency on a plane, Lorimer thinks as Dave follows her in. Being ordered about by supernaturally polite little girls.

"Space-going stews," Bud nudges him. "How 'bout that?" His face is sprouting sweat. Lorimer tells him to go next, his own LSP has less load.

Bud goes in with Andy. The woman named Lady Blue waits beside Lorimer while Judy scrambles on the hull securing their cargo nets. She doesn't seem to have magnetic soles; perhaps ferrous metals aren't used in space now. When Judy begins hauling in the main tether on a simple hand winch, Lady Blue looks at it critically.

"I used to make those," she says to Lorimer. What he can see of her features looks compressed, her dark eyes twinkle. He has the impression she is part Black.

"I ought to get over and clean that aft antenna." Judy floats up. "Later," says Lady Blue. They both smile

at Lorimer. Then the hatch opens and he and Lady Blue go in. When the toggles seat there comes a rising scream of air and Lorimer's suit collapses.

"Can I help you?" She has opened her faceplate, the voice is rich and live. Eagerly Lorimer catches the latches in his clumsy gloves and lets her lift the helmet off. His first breath surprises him, it takes an instant to identify the gas as fresh air. Then the inner hatch opens, letting in greenish light. She waves him through. He swims into a short tunnel. Voices are coming from around the corner ahead. His hand finds a grip and he stops, feeling his heart shudder in his chest.

When he turns that corner the world he knows will be dead. Gone, rolled up, blown away forever with Sunbird. He will be irrevocably in the future. A man from the past, a time traveler. In the future....

He pulls himself around the bend.

The future is a vast bright cylinder, its whole inner surface festooned with unidentifiable objects, fronds of green. In front of him floats an odd tableau: Bud and Dave, helmets off, looking enormous in their bulky white suits and packs. A few meters away hang two bareheaded figures in shiny suits and a dark-haired girl in flowing pink pajamas.

They are all simply staring at the two men, their eyes and mouths open in identical expressions of pleased wonder. The face that has to be Andy's is grinning open-mouthed like a kid at the zoo. He is a surprisingly young boy, Lorimer sees, in spite of his deep voice; blond, downy-cheeked, compactly muscular. Lorimer finds he can scarcely bear to look at the pink woman, can't tell if she really is surpassingly beautiful or plain. The taller suited woman has a shiny, ordinary face.

From overhead bursts an extraordinary sound which he finally recognizes as a chicken cackling. Lady Blue pushes past him.

"All right, Andy, Connie, stop staring and help them get their suits off. Judy, Luna is just as eager to hear about this as we are."

The tableau jumps to life. Afterwards Lorimer can recall mostly eyes, bright curious eyes tugging his boots, smiling eyes upside down over his pack-and always that light, ready laughter. Andy is left alone to help them peel down, blinking at the fittings which Lorimer still finds embarrassing. He seems easy and nimble in his own half open suit. Lorimer struggles out of the last lacings, thinking, a boy! A boy and four women orbiting the sun, flying their big junky ships to Mars. Should he feel humiliated? He only feels grateful, accepting a short robe and a bulb of tea somebody Connie?-gives him.

The suited Judy comes in with their nets. The men follow Andy along another passage, Bud and Dave clutching at the small robes. Andy stops by a hatch.

"This greenhouse is for you, it's your toilet. There's a lot but you have full sun."

Inside is a brilliant jungle, foliage everywhere glittering water droplets, rustling leaves. Something whirs away-a grasshopper.

"You crank that handle." Andy points to a seat on a large crossduct. "The piston rams the gravel and waste into a compost process, and it ends up in the soil core. That vetch is a heavy nitrogen user and a great oxidator. We PUMP CO₂ in and oxy out. It's a real Woolagong."

He watches critically while Bud-tries out the facility.

"What's a Woolagong?" asks Lorimer dazedly.

"Oh, she's one of our inventors. Some of her stuff is weird. When we have a pluggy-looking thing that works we call it a Woolagong." He grins. "The chickens eat the seeds and the hoppers, see, and the hoppers and iguanas eat the leaves. When a greenhouse is going darkside we turn them in to harvest. With this much light I think we could keep a goat, don't you? You didn't have any life at all on your ship, true?"

"No," Lorimer says, "not a single iguana."

"They promised us a Shetland pony for Christmas," says Bud, rattling gravel. Andy joins perplexedly in the laugh.

Lorimer's head is foggy; it isn't only fatigue, the year in Sunbird has atrophied his ability to take in novelty. Numbly he uses the Woolagong and they go back out and forward to Gloria's big control room, where Dave makes a neat short speech to Luna and is answered graciously.

"We have to finish changing course now," Lady Blue-says. Lorimer's impression has been right, she is a small light part-Negro in late middle age. Connie is part something exotic too, he sees; the others are European types.

"I'll get you something to eat." Connie smiles warmly. "Then you probably want to rest. We saved all the cubbies for you." She says "syved"; their accents are all identical.

As they leave the control room Lorimer sees the withdrawn look in Dave's eyes and knows he must be feeling the reality of being a passenger in an alien ship;

not in command, not deciding the course, the communications going on unheard.

That is Lorimer's last coherent observation, that and the taste of the strange, good food. And then being led aft through what he now knows as the gym, to the shaft of the sleeping drum. There are six irised -ports like dog-doors; he pushes through his assigned port and finds himself facing a roomy mattress. Shelves and a desk are in the wall.

"For your excretions." Connie's arm comes through the iris, pointing at bags. "If you have a problem stick your head out and call. There's water."

Lorimer .simply drifts toward the mattress, too sweated out to reply. His drifting ends in a curious heavy settling and his final astonishment: The drum is smoothly, silently starting to revolve. He sinks gratefully onto the pad, growing "heavier" as the minutes pass. About a tenth gee, maybe more, he thinks, it's still accelerating. And falls into the most restful sleep he has known in the long weary year.

It isn't till next day that he understands that Connie and two others have been on the rungs of the gym chamber, sending it around hour after hour without pause or effort and chatting as they went.

How they talk, he thinks again floating back to real present time. The bubbling irritant pours through his memory, the voices of Ginny and Jenny and Penny on the kitchen telephone, before that his mother's voice, his sister Amy's. Interminable. What do they always have to talk, talk, talk of?

"Why, everything," says the real voice of Connie beside him now, "It's natural to share."

"Natural. . . ." Like ants, he thinks. They twiddle their antennae together every time they meet. Where did you go, what did you do? Twiddle-twiddle. How do you feel? Oh, I feel this, I feel that, blah blah twiddle-twiddle. Total coordination of the hive. Women have no self-respect. Say anything, no sense of the strategy of words, the dark danger of naming. Can't hold in.

"Ants, beehives." Connie laughs, showing the bad

tooth. "You truly see us as insects, don't you? Because they're females?"

"Was I talking aloud? I'm sorry." He blinks away dreams.

"Oh, please don't be. It's so sad to hear about your sister and your children and your, your wife. They must have been wonderful people. We think you're very brave."

But he has only thought of Ginny and them all for an instant-what has he been babbling? What is the drug doing to him?

"What are you doing to us?" he demands, lanced by real alarm now, almost angry.

"It's all right, truly." Her hand touches his, warm and somehow shy. "We all use it when we need to explore something. Usually it's pleasant. It's a laevonoramine compound, a disinhibitor, it doesn't dull you like alcohol. We'll be home so soon, you see. We have the responsibility to understand and you're so locked in." Her eyes melt at him. "You don't feel sick, do you? We have the antidote."

"No . . ." His alarm has already flowed away somewhere. Her explanation strikes him as reasonable enough. "We're not locked in," he says or tries to say. "We talk . . ." He gropes for a word to convey the judiciousness, the adult restraint. Objectivity, maybe? "We talk when we have something to say." Irrelevantly he thinks of a mission coordinator named Forrest, famous for his blue jokes. "Otherwise it would all break down," he tells her. "You'd fly right out of the system." That isn't quite what he means; let it pass.

The voices of Dave and Bud ring out suddenly from opposite ends of the cabin, awakening the foreboding of evil in his mind. They don't know us, he thinks. They should look out, stop this. But he is feeling too serene, he wants to think about his own new understanding, the pattern of them all he is seeing at last.

"I feel lucid," he manages to say. "I want to think."

She looks pleased. "We call that the ataraxia effect. It's so nice when it goes that way."

Ataraxia, philosophical calm. Yes. But there are

monsters in the deep, he thinks or says. The night side. The night side of Orren Lorimer, a self hotly dark and complex, waiting in leash. They're so vulnerable. They don't know we can take them. Images rush up: A Judy spreadeagled on the gym rungs, pink pajamas gone, open to him. Flash sequence of the three of them taking over the ship, the women tied up, helpless, shrieking, raped and used. The team-get the satellite station, get a shuttle down to Earth. Hostages. Make them do anything, no defense whatever . . . Has Bud actually said that? But Bud doesn't know, he remembers. Dave knows they're hiding something, but he thinks it's socialism or sin. When they find out

How has he himself found out? Simply listening, really, all these months. He listens to their talk much more than the others; "fraternizing," Dave calls it . . . They all listened at first, of course. Listened and looked and reacted helplessly to the female bodies, the tender bulges so close under the thin, tantalizing clothes, the magnetic mouths and eyes, the smell of them, their electric touch. Watching them touch each other, touch Andy, laughing, vanishing quietly into shared bunks. What goes on? Can I? My need, my need

The power of them, the fierce resentment Bud muttered and groaned meaningfully despite Dave's warnings. He kept needling Andy until Dave banned all questions. Dave himself was noticeably tense and read his Bible a great deal. Lorimer found his own body pointing after them like a famished hound, hoping to Christ the cubicles are as they appeared to be, unwired.

All they learn is that Myda's instructions must have been ferocious. The atmosphere has been implacably antiseptic, the discretion impenetrable. Andy politely ignored every probe. No word or act has told them what, if anything, goes on; Lorimer was irresistibly reminded of the weekend he spent at Jenny's scout camp. The men's training came presently to their rescue, and they resigned themselves to finishing their mission on a super-Sunbird, weirdly attended by a troop of Boy and Girl Scouts.

In every other way their reception couldn't be more courteous. They have been given the run of the ship and their own dayroom in a cleaned-out gravel storage pod. They visit the control room as they wish. Lady Blue and Andy give them specs and manuals and show them every circuit and device of Gloria, inside and out. Luna has bleeped up a stream of science texts and the data on all their satellites and shuttles and the Mars and Luna dome colonies.

Dave and Bud plunged into an orgy of engineering. ;, Gloria is, as they suspected, powered by a fission plant, that uses a range of Lunar minerals. Her ion drive is only slightly advanced over the experimental models of their own day. The marvels of the future seem so far to consist mainly of ingenious modifications.

"It's primitive," Bud tells him. "What they've done is sacrifice everything to keep it simple and easy to maintain. Believe it, they can hand-feed fuel. And the backups, brother! They have redundant redundancy." .

But Lorimer's technical interest soon flags. What he really wants is to be alone a while. He makes a desultory attempt to survey the apparently few new developments in his field, and finds he can't concentrate. What the hell, he tells himself, I stopped being a physicist three hundred years ago. Such a relief to ; be out of the cell of Sunbird; he has given himself up to drifting solitary through the warren of the ship, using a their excellent 400 mm. telescope, noting the odd life of the crew.

When he finds that Lady Blue likes chess, they form 'f a routine of biweekly games. Her personality intrigues him; she has reserve and an aura of authority. But she quickly stops Bud when he calls her "Captain"

"No one here commands in your sense. I'm just the . ' oldest." Bud goes back to "Ma'm."

She plays a solid positional game, somewhat more erratic than a man but with occasional elegant traps. Lorimer is astonished to find that there is only one new chess opening, an interesting queen-side gambit called N the Dagmar. One new opening in three centuries? He mentions it to the others when they wine back from

helping Andy and Judy Paris overhaul a standby converter.

"They haven't done much anywhere," Dave says. "Most of your new stuff dates from the epidemic,

Andy, if you'll pardon me. The program seems to be stagnating. You've been gearing up this Titan project for eighty years"

"We'll get there." Andy grins.

"C'mon, Dave," says Bud. "Judy and me are taking on you two for the next chicken dinner, we'll get a bridge team here yet. Woo-ee, I can taste that chicken! Losers get the iguana."

The food is so good. Lorimer finds himself lingering around the kitchen end, helping whoever is cooking, munching on their various seeds and chewy roots as he listens to them talk. He even likes the iguana. He begins to put on weight, in fact they all do. Dave decrees double exercise shifts.

"You going to make us climb home, Dave-o?" Bud groans. But Lorimer enjoys it, pedaling or swinging easily along the rungs while the women chat and listen to tapes. Familiar music: he identifies a strange spectrum from Handel, Brahms, Sibelius, through Strauss to ballad tunes and intricate light jazz-rock. No lyrics. But plenty of informative texts doubtless selected for his benefit.

From the promised short history he finds out more about the epidemic. It seems to have been an airborne quasi-virus escaped from Franco-Arab military labs, possibly potentiated by pollutants.

"It apparently damaged only the reproductive cells," he tells Dave and Bud. "There was little actual mortality, but almost universal sterility. Probably a molecular substitution in the gene code in the gametes. And the main effect seems to have been on the men. They mention a shortage of male births afterwards, -which suggests that the damage was on the Y-chromosome where it would be selectively lethal to the male fetus."

"Is it still dangerous, Doc?" Dave asks. "What happens to us when we get back home?"

"They can't say. The birthrate is normal now, about

two percent and rising. But the present population may: be resistant. They never achieved a vaccine."

"Only one way to tell," Bud says gravely. "I volunteer."

Dave merely glances at him. Extraordinary bow he- still commands, Lorimer thinks. Not submission, for Pete's sake. A team.

The history also mentions the riots and fighting which swept the world when humanity found itself sterile. Cities bombed, and burned, massacres, panics, mass rapes and kidnapping of women, marauding armies of biologically desperate men, bloody cults. The crazies. But it is all so briefly told, so long ago. Lists of honored names. "We must always be grateful to the brave people who held the Denver Medical Laboratories-2' And then on to the drama of building up the helium supply for the dirigibles.

In three centuries it's all dust, he thinks. What do- I know of the hideous Thirty Years War that was three centuries back for me? Fighting devastated Europe for two generations. Not even names.

The description of their political and economic structure is even briefer. They seem to be, as Myda had said, almost ungoverned.

"It's a form of loose social credit system run by consensus," he says to Dave. "Somewhat like a permanent frontier period. They're building up slowly. Of course they don't need an army or air force. I'm not sure if they even use cash money or recognize private ownership of land. I did notice one favorable reference to early Chinese communalism," he adds, to see Dave's mouth set. "But they aren't tied to a community. They,

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travel about. When I asked Lady Blue about their

police and legal system she told me to wait and talk, real historians.

This Registry seems to be just

that, it's not a policy organ."

"We've run into a situation here, Lorimer," Dave ` says soberly. "Stay away from it. They're not telling` the story."

"You notice they never talk about their husbands?" Bud laughs. "I asked a couple of them what their husbands did and I swear they had to think. And they all have kids. Believe me, it's a swinging scene down there, even if old .Andy acts like he hasn't found out what it's for."

"I don't want any prying into their personal family lives while we're on this ship, Geirr. None whatsoever. That's an order."

"Maybe they don't have families. You ever hear'em mention anybody getting married? That has to be the one thing on a chick's mind. Mark my words, there's been some changes made."

"The social mores are bound to have changed to some extent," Lorimer says. "Obviously you have women doing more work outside the home, for one thing. But they have family bonds; for instance Lady Blue has a sister in an aluminum mill and another in health. Andy's mother is on Mars and his sister works in Registry. Connie has a brother or brothers on the fishing fleet near Biloxi , and her sister is coming out to replace her here next trip, she's making yeast now."

"That's the top of the iceberg."

"I doubt the rest of the iceberg is very sinister, Dave."

But somewhere along the line the blandness begins to bother Lorimer too. So much is missing. Marriage, love affairs, children's troubles, jealousy squabbles, status, possessions, money problems, sicknesses, funerals even-all the daily minutiae that occupied Ginny and her friends seems to have been edited out of these women's talk. Edited.... Can Dave be right, is some big, significant aspect being deliberately kept from them?

"I'm still surprised your language hasn't changed more," he says one day to Connie during their exertions in the gym.

"Oh, we're very careful about that." She climbs at an angle beside him, not using her hands. "It would be a dreadful loss if we couldn't understand the books. All the children are taught from the same original tapes, you see. Oh, there's faddy words we use for a

while, but our communicators have to learn the old texts by heart, that keeps us together."

Judy Paris grunts from the pedicycle. "You, my dear children, will never know the oppression we suffered," she declaims mockingly.

"Judys talk too much," says Connie.

"We do, for a fact." They both laugh.

"So you still read our so-called great books, our fiction and poetry?" asks Lorimer. "Who do you read, H. G. Wells? Shakespeare? Dickens, ah, Balzac, Kipling, Brian?" He gropes; Brian had been a bestseller Ginny liked. When had he last looked at Shakespeare or the others?

"Oh, the historicals," Judy says. "It's interesting, I guess. Grim. They're not very realistic. I'm sure it was to you," she adds generously.

And they turn to discussing whether the laying hens are getting too much light, leaving Lorimer to wonder how what he supposes are the eternal verities of human nature can have faded from a world's reality. Love, conflict, heroism, tragedy-all "unrealistic"? Well, flight crews are never great readers; still, women read more Something has changed, he can sense it. Something basic enough to affect human nature. A physical development perhaps; a mutation? What is really under those floating clothes?

It is the Judys who give him part of it.

He is exercising alone with both of them, listening to them gossip about some legendary figure named Dagmar.

"The Dagmar who invented the chess opening?" he asks.

"Yes. She does anything, when she's good she's great."

"Was she bad sometimes?"

A Judy laughs. "The Dagmar problem, you can say. She has this tendency to organize everything. It's fine when it works but every so often it runs wild; she thinks she's queen or what. Then they have to get out butterfly nets."

All in present tense-but Lady Blue has told him the Dagmar gambit is over a century old.

Longevity, he thinks; by god, that's what they're hiding. Say they've achieved a doubled or tripled life span, that would certainly change human psychology, affect their outlook on everything. Delayed maturity, perhaps? We were working on endocrine cell juvenescence when I left. How old are these girls, for instance?

He is framing a question when Judy Dakar says, "I was in the creche when she went pluggo. But she's good, I loved her later on."

Lorimer thinks she has said "crash" and then realizes she means a communal nursery. "Is that the same Dagmar?" he asks. "She must be very old."

"Oh no, her sister."

"A sister a hundred years apart?"

"I mean, her daughter. Her, her grand-daughter." She starts pedaling fast.

"Judys," says her twin, behind them.

Sister again. Everybody he learns of seems to have an extraordinary number of sisters, Lorimer reflects. He hears Judy Paris saying to her twin, "I think I remember Dagmar at the creche. She started uniforms for everybody. Colors and numbers."

"You couldn't have, you weren't born," Judy Dakar retorts.

There is a silence in the drum.

Lorimer turns on the rungs to look at them. Two flushed cheerful faces stare back warily, make identical head-dipping gestures to swing the black hair out of their eyes. Identical. . . . But isn't the Dakar girl on the cycle a shade more mature, her face more weathered?

"I thought you were supposed to be twins."

"Ah, Judys talk a lot," they say together-and grin guiltily.

"You aren't sisters," he tells them. "You're what we called clones."

Another silence.

"Well, yes," says Judy Dakar. "We call it sisters.

Oh, mother! We weren't supposed to tell you, Myda said you would be frightfully upset. It was illegal in your day, true?"

"Yes. We considered it immoral and unethical, experimenting with human life. But it doesn't upset me, personally."

"Oh, that's beautiful, that's great," they say together,, "We think of you as different," Judy Paris blurts,;; "you're more hu- more like us. Please, you don't: have to tell the others, do you? Oh, please don't."

"It was an accident there were two of us here," says. Judy Dakar. "Myda warned us. Can't you wait a little while?" Two identical pairs of dark eyes beg him.

"Very well," he says slowly. "I won't tell my friends= for the time being. But if I keep your secret you have' to answer some questions. For instance, how many, of your people are created artificially this way?"

He begins to realize he is somewhat upset. Dave is right, damn it, they are hiding things. Is this brave new world populated by subhuman slaves, run by master brains? Decorticate zombies, workers without stomachs or sex, human cortexes wired into machines. Monstrous experiments rush through his mind. He has been .. naive again. These normal-looking women could be

fronting for .a hideous world.

"How many?"

"There's only about eleven thousand of us," Judy, Dakar says. The two Judys look at each other, trans-, parently confirming something. They're unschooled in deception, Lorimer thinks; is that good? And is diverted by Judy Paris exclaiming, "What we can't figure out is, why did you think it was wrong?"

Lorimer tries to tell them, to convey the horror of manipulating human identity, creating abnormal life. The threat to individuality, the fearful power it would put in a dictator's hand.

"Dictator?" one of them echoes blankly. He looks at their faces and can only say, "Doing things to people without their consent. I think it's sad."

"But that's just what we think about you," the younger Judy bursts out. "How do you know who you are? Or who anybody is? All alone, no sisters to share with! You don't know what you can do, or what

would be interesting to try. All you poor singletons, you why, you just have to blunder along and die, all for nothing!"

Her voice trembles. Amazed, Lorimer sees both of them are misty eyed.

"We better get this m-moving," the other Judy says.

They swing back into the rhythm and in bits and pieces Lorimer finds out how it is. Not bottled embryos, they tell him indignantly. Human mothers like everybody else, young mothers, the best kind. A somatic cell nucleus is inserted in an enucleated ovum and reimplanted in the womb. They have each borne two "sister" babies in their late teens and nursed them a while before moving on. The creches always have plenty of mothers.

His longevity notion is laughed at; nothing but some rules of healthy living have as yet been achieved. "We should make ninety in good shape," they assure him. "A hundred and eight, that was Judy Eagle, she's our record. But she was pretty blah at the end."

The clone-strains themselves are old, they date from the epidemic. They were part of the first effort to save the race when the babies stopped and they've continued ever since.

"It's so perfect," they tell him. "We each have a book, it's really a library. All the recorded messages. The Book of Judy Shapiro, that's us. Dakar and Paris are our personal names, we're doing cities now." They laugh, trying not to talk at once about how each Judy adds her individual memoir, her adventures and problems and discoveries in the genotype they all share.

"If you make a mistake it's useful for the others. Of course you try not to-or at least make a new one."

"Some of the old ones aren't so realistic," her other self puts in. "Things were so different, I guess. We make excerpts of the parts we like best. And practical things, like Judys should watch out for skin cancer."

"But we have to read the whole thing every ten years," says the Judy called Dakar. "It's inspiring. As

you get older you understand some of the ones you,.: didn't before."

Bemused, Lorimer tries to think how it would be, hearing the voices of three hundred years of Orren Lorimers. Lorimers who were mathematicians or plumbers or artists or bums or criminals, maybe. The continuing exploration and completion of self. And a dozen living doubles; aged Lorimers, infant Lorimers. And other Lorimers' women and children . . . would he enjoy it or resent it? He doesn't know.

"Have you made your records yet?"

"Oh, we're too young. Just notes in case of accident."

"Will we be in them?"

"You can say!" They laugh merrily, then sober. "Truly you won't tell?" Judy Paris asks. "Lady Blue, we have to let her know what we did. Oof. But truly ;,' you won't tell your friends?" '

He hadn't told on them, he thinks now, emerging. back into his living self. Connie beside him is drinking cider from a bulb. He has a drink in his hand too, he 4' finds. But he hasn't told.

"Judys will talk." Connie shakes her head, smiling. Lorimer realizes he must have gabbled out the whole thing.

"It doesn't matter," he tells her. "I would have

guessed soon anyhow. There were too many clues .

Woolagongs invent, Mydas worry, Jans are brains,

Billy Dees work so hard. I picked up six different

stories of hydroelectric stations that were built or improved or are being run by one Lala Singh. Your

whole s

way of life. I'm more interested in this sort of thing

than a respectable physicist should be," he says wryly. u

"You're all clones, aren't you? Every one of you. What

do Connies do?" `!

"You really do know." She gazes at him like a mother whose child has done something troublesome and bright. "Whew! Oh, well, Connies farm like mad, ; we grow things. Most of our names are plants. I'm Veronica, by the way. And of course the cr6ches, that's

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our weakness. The runt mania. We tend to focus on anything smaller or weak."

Her warm eyes focus on Lorimer, who draws back involuntarily.

"We control it." She gives a hearty chuckle. "We aren't all that way. There's been engineering Connies, and we have two young sisters who love metallurgy. It's fascinating what the genotype can 'do if you try. The original Constantia Morelos was a chemist, she weighed ninety pounds and never saw a farm in her life." Connie looks down at her own muscular arms. "She was killed by the crazies, she fought with weapons. It's so hard to understand And I had a sister Timothy who made dynamite and dug two canals and she wasn't even an andy."

"An andy," he says.

"Oh, dear."

"I guessed that too. Early androgen treatments."

She nods hesitantly. "Yes. We needed the muscle power for some jobs. A few. Kays are quite strong anyway. Whew!" She suddenly stretches her back, wriggles as if she'd been cramped. "Oh, I'm glad you

know. It's been such a strain. We couldn't even sing."

"Why not?"

"Myda was sure we'd make mistakes, all the words we'd have to change. We sing a lot." She softly hums a bar or two.

"What kinds of songs do you sing?"

"Oh, every kind. Adventure songs, work songs, mothering songs, roaming songs, mood songs, trouble songs, joke songs-everything."

"What about love songs?" he ventures. "Do you still have, well, love?"

"Of course, how could people not love?" But she looks at him doubtfully. "The love stories I've heard from your time are so, I don't know, so weird. Grim and pluggy. It doesn't seem like love Oh, yes, we have famous love songs. Some of them are partly sad too. Like Tamil and Alcmene O, they're fated together. Connies are fated too, a little." She grins bashfully. "We love to be with Ingrid Anders. It's more one

sided. I hope there'll be an Ingrid on my next hitch...; She's so exciting, she's like a little diamond."

Implications are exploding all about him, sparkling with questions. But Lorimer wants to complete the darker pattern beyond.

"Eleven thousand genotypes, two million. people: that averages two hundred of each of you alive now." She nods. "I suppose it varies? There's more of some?"

"Yes, some types aren't as viable. But we haven't lost any since early days. They tried to preserve all the genes they could. We have people from all the major races and a lot of small strains. Like me, I'm the Carib Blend. Of course we'll never know what was', lost. But eleven thousand is a lot, really. We all try

to know every one, it's a life bobby."

A chill penetrates his ataraxia. Eleven thousand, j period. That is the true population of Earth now. He thinks of two hundred tall olive skinned women named after plants, excited by two hundred little bright Ingrids; two hundred talkative Judys, two hundred self possessed Lady Blues, two hundred Margos and Mydas and the rest. He shivers. The heirs, the happy pallbearers of the human race.

"So evolution ends," he says somberly.

"No, why? It's just slowed down. We do everything much slower than you did, I think. We like to experience things fully. We have time." She stretches again, smiling. "There's all the time."

"But you have no new genotypes. It is the end."

"Oh but there are, now. Last century they worked j out the way to make haploid nuclei combine. We can make a stripped egg cell function like pollen," she says,

proudly. "I mean sperm. It's tricky, some don't come
out too well. But now we're finding both Xs viable
we have over a hundred new types started. Of course.
it's hard for them, with no sisters. The donors try
to help."

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Over a hundred, he thinks. Well. Maybe. . . . But "both Xs viable." What does that mean? She must be referring to the epidemic. He had figured it primarily affected the men. His mind goes happily to work on the

new puzzle, ignoring a sound from somewhere that is trying to pierce his calm.

"It was a gene or genes on the X chromosome that was injured," he guessed aloud. "Not the Y. And the lethal trait had to be recessive, right? Thus there would have been no births at all for a time, until some men recovered or were isolated long enough to manufacture undamaged X-bearing gametes. But women carry their lifetime supply of ova, they could never regenerate reproductively. When they mated with the recovered males only female babies would be produced, since the female carries two Xs and the mother's defective gene would be compensated by a normal X from _ the father. But the male is XY, he receives only the mother's defective X. Thus the lethal defect would be expressed, the male fetus would be finished A planet of girls and dying men. The few odd viables died off."

"You truly do understand," she says admiringly.

The sound is becoming urgent; he refuses to hear it, there is significance here.

"So we'll be perfectly all right on Earth. No problem. In theory we can marry again and have families, daughters anyway."

"Yes," she says. "In theory."

The sound suddenly broaches his defenses, becomes the loud voice of Bud Geirr raised in song. He sounds plain drunk now. It seems to be coming from the main garden pod, the one they use to grow vegetables, not sanitation. Lorimer feels the dread alive again, rising closer. Dave ought to keep an eye on him. But Dave seems to have vanished too; he recalls seeing him go toward Control with Lady Blue.

"OH, THE SUN SHINES BRIGHT ON PRET-TY RED WI-I-ING," carols Bud.

Something should be done, Lorimer decides painfully. He stirs; it is an effort.

"Don't worry," Connie says. "Andy's with them."

"You don't know, you don't know what you've started." He pushes off toward the garden hatchway.

"-AS SHE LAY SLE-EETING, A COWBOY

CREE-E-EETING-" General laughter from the
hatchway. Lorimer coasts through into the green daz
zle. Beyond the radial fence of snap-beans he sees
Bud sailing in an exaggerated crouch after Judy Paris. _a
Andy hangs by the iguana cages, laughing. 4

Bud catches one of Judy's ankles and stops them both with a flourish, making her yellow pajamas swirl.
o She giggles at him upsidedown, making no effort to free herself.

"I don't like this," Lorimer whispers.

"Please don't interfere." Connie has hold of his arm,

anchoring them both to the tool rack. Lorimer's alarm _~
seems to have ebbed; he will watch, let serenity return. a
The others have not noticed them.

"Oh, there once was an Indian maid." Bud sings more restrainedly, "Who never was a-fraid, that some `:

buckaroo would slip it up her, ahem, ahem," he coughs "a
ostentatiously, laughing. "Hey, Andy, I hear them call
ing you." 1

"What?" says Judy, "I don't hear anything."

"They're calling you, lad. Out there."

"Who?" asks Andy, listening. ?

"They are, for Crissake." He lets go of Judy and
kicks over to Andy. "Listen, you're a great kid. Can't
you see me and Judy have some business to discuss

in private?" He turns Andy gently around and pushes -
him at the bean-stakes. "It's New Year's Eve, dummy."

Andy floats passively away through the fence of ivy vines, raising a hand at Lorimer and Connie. Bud is
back with Judy.

"Happy New Year, kitten," he smiles.

"Happy New Year. Did you do special things on New Year?" she asks curiously.

"What we did on New Year's." He chuckles, taking her shoulders in his hands. "On New Year's Eve,
yes we did. Why don't I show you some of our primitive Earth customs, h'mm?"

She nods, wide-eyed.

"Well, first we wish each other well, like this." He draws her to him and lightly kisses her cheek.
"Keerist, what a dumb bitch," he says in a totally diff

voice. "You can tell you've been out too long when the geeks start looking good. Knockers, ahhh-" His
hand plays with her blouse. The man is unaware, Lorimer realizes. He doesn't know he's drugged, he's
speaking his thoughts. I must have done that. Oh, god . . . He takes shelter behind his crystal lens, an
observer in the protective light of eternity.

"And then we smooch a little." The friendly voice is back. Bud holds the girl closer, caressing her back.

"Fat ass." He puts his mouth on hers; she doesn't resist. Lorimer watches Bud's arms tighten, his hands working on her buttocks, going under her clothes. Safe in the lens his own sex stirs. Judy's arms are waving aimlessly.

Bud breaks for a breath, a hand at his zipper.

"Stop staring," he says hoarsely. "One fucking more word, you'll find out what that big mouth is for. Oh, man, a flagpole. Like steel. . . . Bitch, this is your lucky day." He is baring her breasts now, big breasts. Fondling them. "Two fucking years in the ass end of no place," he mutters, "shit on me will you? Can't wait, watch ittitty-titty-titties-"

He kisses her again, quickly and smiles down at her. "Good?" he asks in his tender voice, and sinks his mouth on her nipples, his hand seeking in her thighs. She jerks and says something muffled. Lorimer's arteries are pounding with delight, with dread.

"I-I think this should stop," he makes himself say falsely, hoping he isn't saying more. Through the pulsing tension he hears Connie whisper back, it sounds like "Don't worry, Judy's very athletic." Terror stabs him, they don't know. But he can't help.

"Cunt," Bud grunts, "you have to have a cunt in there, is it froze up? You dumb cunt-- " Judy's face appears briefly in her floating hair, a remote part of Lorimer's mind notes that she looks amused and uncomfortable. His being is riveted to the sight of Bud expertly controlling her body in midair, peeling down the yellow slacks. Oh god-her dark pubic mat, the thick white thighs-a perfectly normal woman, no mutation. Ohhh, god. . . . But there is suddenly a

drifting shadow in the way: Andy again floating over them with something in his hands.

"You dinko, Jude?" the boy asks.

Bud's face comes up red and glaring. "Bug .out, you!"

"Oh, I won't bother."

"Jee-sus Christ." Bud lunges up and grabs Andy's arm, his legs still hooked around Judy. "This is man's business, boy, do I have to spell it out?" He shifts his gyp. "Shoo!"

In one swift motion he has jerked Andy close and backhanded his face hard, sending him sailing into the vines.

Bud gives a bark of laughter, bends back to Judy. Lorimer can see his erection poking through his fly. He wants to utter some warning, tell them their peril, but he can only ride the hot pleasure surging through him, melting his crystal shell. Go on, more-avidly he sees Bud mouth her breasts again and then suddenly flip her whole body over, holding her wrists behind her in one fist, his legs pinning hers. Her bare buttocks bulge up helplessly, enormous moons. "Ass-s-s," Bud groans. "Up you bitch, ahh-hh-" He pulls her butt onto him.

Judy gives a cry, begins to struggle futilely. Lorimer's shell boils and bursts. Amid the turmoil ghosts outside are trying to rush in. And something is moving, a real ghost-to his dismay he sees it is Andy again, floating toward the joined bodies, holding a whirring thing. Oh, no-a camera. The fools.

"Get away!" he tries to call to the boy.

But Bud's head turns, he has seen. "You little pissass." His long arm shoots out and captures Andy's shirt, his legs still locked around Judy.

"I've had it with you." His fist slams into Andy's mouth, the camera goes spinning away. But this time Bud doesn't let him go, he is battering the boy, all of them rolling in a tangle in the air.

"Stop!" Lorimer hears himself shout, plunging at them through the beans. "Bud, stop it! You're hitting a woman."

The angry face comes around, squinting at him.

"Get lost, Doc, you little fart. Get your own ass."

"Andy' is a woman, Bud. You're hitting a girl. She's not a man."

"Huh?" Bud glances at Andy's bloody face. He shakes the shirtfront. "Where's the boobs?"

"She doesn't have breasts, but she's a woman. Her real name is Kay. They're all women. Let her go, Bud."

Bud stares at the androgyne, his legs still pinioning Judy, his penis poking the air. Andy puts up his/her hands in a vaguely combative way.

"A dyke?" says Bud slowly. "A goddam little bull dyke? This I gotta see." .

He feints casually, thrusts a hand into Andy's crotch.

"No balls!" he roars. "No balls at all!" Convulsing with laughter he lets himself tip over in the air, releasing Andy, his legs letting Judy slip free. "Na-ah," he interrupts himself to grab her hair and goes on guffawing. "A dyke! Hey, dykey!" He takes hold of his hard-on, waggles it at Andy. "Eat your heart out, little dyke." Then he pulls up Judy's head. She has been watching unresisting all along.

"Take a good look, girlie. See what old Buddy has for you? Tha-aat's what you want, say it. How long since you saw a real man, hey, dog-face?"

Maniacal laughter bubbles up in Lorimer's gut, farce too strong for fear. "She never saw a man in her life before, none of them has. You imbecile, don't you get it? There aren't any other men, they've all been dead three hundred years."

Bud slowly stops chuckling, twists around to peer at Lorimer.

"What'd I hear you say, Doc?"

"The men are all gone. They died off in the epidemic. There's nothing but women left alive on Earth."

"You mean there's, there's two million women down there and no men?" His jaw gapes. "Only little bull dykes like Andy Wait a minute. Where do, they get the kids?"

"They grow them artificially. They're all girls."

"Gawd. . . ." Bud's hand clasps his drooping penis,

jiggles it absently until it stiffens. "Two million hot little cunts down there, waiting for old Buddy. Gawd. The last man on Earth. . . You don't count, Doc. And old Dave, he's full of crap."

He begins to pump himself, still holding Judy by the hair. The motion sends them slowly backward. Lorimer sees that Andy-Kay has the camera going again. There is a big star-shaped smear of blood on the boyish face; cut lip, probably. He himself feels globed in thick air, all action spent. Not lucid.

"Two million cunts," Bud repeats. "Nobody home, nothing but pussy everywhere. I can do anything I want any time. No more shits." He pumps faster. "They'll be spread out for miles begging for it. Clawing each other for it. All for me, King Buddy. .

I'll have strawberries and cunt for breakfast. Hot buttered boobies, man. 'N' head, there'll be a couple little twats licking whip cream off my cock all day long Hey, I'll have contests! Only the best for old Buddy now. Not you, cow." He jerks Judy's head. "U'1 teenies, tight li'l holes. I'll make the old broads

hot 'em up while I watch." He frowns slightly, working on himself. In a clinical corner of his mind Lorimer guesses the drug is retarding ejaculation. He tells himself that he should be relieved by Bud's self-absorption, is instead obscurely terrified.

"King, I'll be their god," Bud is mumbling. "They'll make statues of me, my cock a mile high, all over. His Majesty's sacred balls. They'll worship it. . Buddy Geirr, the last cock on Earth. Oh man, if old George could see that. When the boys hear that they'll really shit themselves, woo-ee!"

He frowns harder. "They can't all be gone." His eyes rove, find Lorimer. "Hey, Doc, there's some men left someplace, aren't there? Two or three, anyway?"

"No." Effortfully Lorimer shakes his head. "They're all dead, all of them."

"Balls." Bud twists around, peering at them. "There has to be some left. Say it." He pulls Judy's head up. "Say 11, cunt."

"No, it's true," she says.

"No men;" Andy/Kay echoes.

"You're lying." Bud scowls, frigs himself faster, thrusting his pelvis. "There has to be some men, sure there are They're hiding out in the hills, that's what it is. Hunting, living wild Old wild men, I knew it."

"Why do there have to be men?" Judy asks him, being jerked to and fro.

"Why, you stupid bitch." He doesn't look at her, thrusts furiously. "Because, dummy, otherwise nothing counts, that's why There's some men, some good old buckaroos-- Buddy's a good old buckaroo--"

"Is he going to emit sperm now?" Connie whispers.

"Very likely," Lorimer says, or intends to say. The spectacle is of merely clinical interest, he tells himself, nothing to dread. One of Judy's hands clutches some. thing: a small plastic bag. Her other hand is on her hair that Bud is yanking. It must be painful.

"Uhhh, ahh," Bud pants distressfully, "fuck away, fuck-" Suddenly he pushes Judy's head into his groin, Lorimer glimpses her nonplussed expression.

"You have a mouth, bitch, get working! . . . Take it for shit's sake, take it! Uh, uh-" A small oyster jets limply from him. Judy's arm goes after it with the bag as they roll over in the air.

"Geirr!"

Bewildered by the roar, Lorimer turns and sees Dave-Major Norman Davis-looming in the hatchway. His arms are out, holding back Lady Blue and the other Judy.

"Geirr! I said there would be no misconduct on this ship and I mean it. Get away from that woman!"

Bud's legs only move vaguely, he does not seem to have heard. Judy swims through them bagging the last drops.

"You, what the hell are you doing?"

In the silence Lorimer heard his own voice say, "Taking a sperm sample, I should think."

"Lorimer? Are you out of your perverted mind? Get Geirr to his quarters."

Bud slowly rotates upright. "Ah, the reverend Leroy," he says tonelessly.

"You're drunk, Geirr. Go to your quarters."

"I have news for you, Dave-o," Bud tells him in the same flat voice. "I bet you don't know we're the last men on Earth. Two million twats down there."

"I'm aware of that," Dave says furiously. "You're a drunken disgrace. Lorimer, get that man out of here."

But Lorimer feels no nerve of action stir. Dave's angry voice has pushed back the terror, created a strange hopeful stasis encapsulating them all.

"I don't have to take that any more" Bud's head moves back and forth, silently saying no, no, as he drifts toward Lorimer. "Nothing counts any more. All gone. What for, friends?" His forehead puckers. "Old Dave, he's a man. I'll let him have some. The dummies. . . . Poor old Doc, you're a creep but you're a better'n nothing, you can have some too We'll have places, see, big spreads. Hey, we can run drags, there has to be a million good old cars down there. We can go hunting. And then we find the wild men."

Andy, or Kay, is floating toward him, wiping off blood.

"Ah, no you don't!" Bud snarls and lunges for her. As his arm stretches out Judy claps him on the triceps.

Bud gives a yell that dopplers off, his limbs thrash
and then he is floating limply, his face suddenly serene.
He is breathing, Lorimer sees, releasing his own breath,
watching them carefully straighten out the big body.
Judy plucks her pants out of the vines, and they start
towing him out through the fence. She has the camera
and the specimen bag.

"I put this in the freezer, dinko?" she says to Connie as they come by. Lorimer has to look away.

Connie nods. "Kay, how's your face?"

"I felt it!" Andy Kay says excitedly through puffed -° lips. "I felt physical anger, I wanted to hit him. Woo-ee!"

"Put that man in my wardroom," Dave orders as they __. pass. He has moved into the sunlight over the lettuce

rows. Lady Blue and Judy Dakar are back by the wall, watching. Lorimer remembers what he wanted to ask.

"Dave, do you really know? They're all women?"

Dave eyes him broodingly, floating erect with the sun on his chestnut beard and hair. The authentic features of man. Lorimer thinks of his own father, a small pale figure like himself. He feels better.

"I always knew they were trying to deceive us, Lori mer. Now that this woman has admitted the facts I understand the full extent of the tragedy."

It is his deep, mild Sunday voice. The women look at him interestedly.

"They are lost children. They have forgotten He who made them. For generations they have lived in darkness."

"They seem to be doing all right," Lorimer hears himself say. It sounds rather foolish.

"Women are not capable of running anything. You should know that, Lorimer. Look what they've done here, it's pathetic. Marking time, that's all. Poor souls." Dave sighs gravely. "It is not their fault. I recognize that. Nobody has given them any guidance for three hundred years. Like a chicken with its head off."

Lorimer recognizes his own thought; the structureless, chattering, trivial, two-million-celled protoplasmic lump.

"The head of the woman is the man," Dave says crisply. "Corinthians one eleven three. No discipline whatsoever." He stretches out his arm, holding up his crucifix as he drifts toward the wall of vines. "Mockery. Abominations." He touches the stakes and turns, framed in the green arbor.

"We were sent here, Lorimer. This is God's plan. I was sent here. Not you, you're as bad as they are. My 'middle name is Paul," he adds in a conversational tone. The sun gleams on the cross, on his uplifted face, a strong, pure, apostolic visage. Despite some intellectual reservations Lorimer feels a forgotten nerve respond.

"Oh Father, send me strength," Dave prays quietly, his eyes closed. "You have spared us from the void to

bring Your light to this suffering world. I shall lead Thy erring daughters out of the darkness. I shall be a stern but merciful father to them in Thy name. Help me to teach the children Thy holy law and train them in the fear of Thy righteous wrath. Let the women, learn in silence and all subjection; Timothy two eleven. They shall have sons to rule over them and glorify Thy name."

He could do it, Lorimer thinks, a man like that really could get life going again. Maybe there is some mystery, some plan. I was too ready to give up. No guts.... He becomes aware of women whispering.

"This tape is about through." It is Judy Dakar. "Isn't that enough? He's just repeating."

"Wait," murmurs Lady Blue.

"And she brought forth a man child to rule the nations with a rod of iron, Revelations twelve five,"

Dave says, louder. His eyes are open now, staring intently at the crucifix. "For God so loved the world that he sent his only begotten son. "

Lady Blue nods; Judy pushes off toward Dave. Lorimer understands, protest rising in his throat. They mustn't do that to Dave, treating him like an animal for Christ's sake, a man-

"Dave! Look out, don't let her get near you!" he shouts.

"May I look, Major? It's beautiful, what is it?" Judy is coasting close, her hand out toward the crucifix.

"She's got a hypo, watch it!"

But Dave has already wheeled round. "Do not profane, woman!"

He thrusts the cross at her like a weapon, so menacing that she recoils in mid-air and shows the glinting needle in her hand.

"Serpent!" He kicks her shoulder away, sending himself upward. "Blasphemer. All right," he snaps in his ordinary voice, "there's going to be some order around here starting now. Get over by that wall, all of you."

Astounded, Lorimer sees that Dave actually has a weapon in his other hand, a small grey handgun. He must have had it since Houston. Hope and ataraxia shrivel away, he is shocked into desperate reality.

"Major Davis," Lady Blue is saying. She is floating right at him, they all are, right at the gun. Oh god, do they know what it is?

"Stop!" he shouts at them. "Do what he says, for god's sake. That's a ballistic weapon, it can kill you. It shoots metal slugs." He begins edging toward Dave along the vines.

"Stand back." Dave gestures with the gun. "I am taking command of this ship in the name of the United States of America under God."

"Dave, put that gun away. You don't want to shoot people."

Dave sees him, swings the gun around. "I warn you, Lorimer. Get over there with them. Geirr's a man, when he sobers up." He looks at the women still drifting puzzledly toward him and understands. "All right, lesson one. Watch this."

He takes deliberate aim at the iguana cages and fires. There is a pinging crack. A lizard explodes bloodily, voices cry out. A loud mechanical warble starts up and overrides everything.

"A leak!" Two bodies go streaking toward the far end, everybody is moving. In the confusion Lorimer sees Dave calmly pulling himself back to the hatchway behind them, his gun ready. He pushes frantically across the tool rack to cut him off. A spray cannister comes loose in his grip, leaving him kicking in the air. The alarm warble dies.

"You will stay here until I decide to send for you," Dave announces. He has reached the hatch, is pulling the massive lock door around. It will seal off the pod, Lorimer realizes.

"Don't do it, Dave! Listen to me, you're going to kill us all." Lorimer's own internal alarms are shaking him, he knows now what all that damned volleyball has been for and he is scared to death. "Dave, listen to me!"

"Shut up." The gun swings toward him. The door is moving. Lorimer gets a foot on solidity.

"Duck! It's a bomb!" With all his strength he hurls the massive cannister at Dave's head and launches himself after it.

"Look out!" And he is sailing helplessly in slow motion, hearing the gun go off again, voices yelling. Dave

must have missed him, overhead shots are tough-and then he is doubling downward, grabbing hair. A hard blow strikes his gut, it is Dave's leg kicking past him but he has his arm under the beard, the big man bucking like a bull, throwing him around.

"Get the gun, get it!" People are bumping him, getting hit. Just as his hold slips a hand snakes by him onto Dave's shoulder and they are colliding into the hatch door in a tangle. Dave's body is suddenly no longer at war.

Lorimer pushes free, sees Dave's contorted face tip slowly backward looking at him.

"Judas-"

The eyes close. It is over.

Lorimer looks around. Lady Blue is holding the gun, sighting down the barrel.

"Put that down," he gasps, winded. She goes on examining it.

"Hey, thanks!" Andy-Kay-grins lopsidedly at him, rubbing her jaw. They are all smiling, speaking warmly to him, feeling themselves, their torn clothes. Judy Dakar has a black eye starting, Connie holds a shattered iguana by the tail.

Beside him Dave drifts breathing stertorously, his blind face pointing at the sun. Judas . . . Lorimer feels the last shield break inside him, desolation flooding in. On the deck my captain lies.

Andy-who-is-not-a-man comes over and matter-of-factly zips up Dave's jacket, takes hold of it- and begins to tow him out. Judy Dakar stops them long enough to wrap the crucifix chain around his hand. Somebody laughs, not unkindly, as they go by.

For an instant Lorimer is back in that Evanston toilet. But they are gone, all the little giggling girls. All gone forever, gone with the big boys waiting outside to jeer at him. Bud is right, he thinks. Nothing

counts any more. Grief and anger hammer at him. He knows now what he has been dreading: not their vulnerability, his. .

"They were good men," he says bitterly. "They aren't bad men. You don't know what bad means. You did it to them, you broke them down. You made them do crazy things. Was it interesting? Did you learn enough?" His voice is trying to shake. "Everybody has aggressive fantasies. They didn't act on them. Never. Until you poisoned them."

They gaze at him in silence. "But nobody does," Connie says finally. "I mean, the fantasies."

"They were good men," Lorimer repeats elegiacally. He knows he is speaking for it all, for Dave's Father, for Bud's manhood, for himself, for Cro-Magnon, for the dinosaurs too, maybe. "I'm a man. By god yes, I'm angry. I have a right. We gave you all this, we made it all. We built your precious civilization and your knowledge and comfort and medicines and your dreams. All of it. We protected you, we worked our balls off keeping you and your kids. It was hard. It was a fight, a bloody fight all the way. We're tough. We had to be, can't you understand? Can't you for Christ's sake understand that?"

Another silence.

"We're trying." Lady Blue sighs. "We are trying, Dr. Lorimer. Of course we enjoy your inventions and we do appreciate your evolutionary role. But you must see there's a problem. As I understand it, what you protected people from was largely other males, wasn't it? We've just had an extraordinary demonstration. You have brought history to life for us." Her wrinkled brown eyes smile at him; a small, tea-colored matron holding an obsolete artifact.

"But the fighting is long over. It ended when you did, I believe. We can hardly turn you loose on Earth, and we simply have no facilities for people with your emotional problems."

"Besides, we don't think you'd be very happy," Judy Dakar adds earnestly.

"We could clone them," says Connie. "I know

there's people who would volunteer to mother. The. young ones might be all right, we could try."

"We've been over all that." Judy Paris is drinking from the water tank. She rinses and spits into the soil bed, looking worriedly at Lorimer. "We ought for take care of that leak now, we can talk tomorrow. And tomorrow and tomorrow." She smiles at him, unselfconsciously rubbing her crotch. "I'm sure a lot of people will want to meet you."

"Put us on an island," Lorimer says wearily. ",`On. three islands." That look; he knows that look of preoccupied compassion. His mother and sister had looked just like that the time the diseased kitten came in the yard. They had comforted it and fed it and tenderly taken it to the vet to be gassed.

An acute, complex longing for the women he has known grips him. Women to whom men were not simply irrelevant. Ginny . . . dear god. His sister Amy Poor Amy, she was good to him when they were kids. His mouth twists.

"Your problem is," he says, "if you take the risk of giving us equal rights, what could we possibly contribute?"

"Precisely," says Lady Blue. They all smile at him relievedly, not understanding that he isn't. .

"I think I'll have that antidote now," he says.

Connie floats toward him, a big, warm-hearted, utterly alien woman. "I thought you'd like yours in a bulb." She smiles kindly.

"Thank you." He takes the small, pink bulb. "Just tell me," he says to Lady Blue, who is looking at the bullet gashes, "what do you call yourselves? Women's World? Liberation? Amazonia?"

"Why, we call ourselves human beings." Her eyes twinkle absently at him, go back to the bullet marks. "Humanity, mankind." She shrugs. "The human race."

The drink tastes cool going down, something like peace and freedom, he thinks. Or death.