

Acosmia

A Novel

By

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Ndala

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To Paul and Michele,

who years ago, when this was first written, laughed in the right places. May your lives from now on be as interesting as we imagined them then, if not as harrowing.

Notice

Although, of the earthlings in these pages, the names of Paul and Michele Blair, Michael Wang, and Jonathan Meyer are those of real people, and certain events of their early childhood related here actually happened, the characters that have these names are fictitious, dictated by the needs of the novel, and were not intended actually to represent these persons. None of the characters in this fable represent anyone real. The original version of this book was made years and years ago, when I thought it would be fun for my children to see grownups with their names having adventures. I see no particular purpose in changing the names now, since I have grown to know and love the fictional persons almost as much as the so different real ones.

Note to the 2001 Printing

I had planned to do some revising to bring the book into conformity with advances that had taken place since the 1970s when it was originally written; but then I thought it would be interesting to just leave it as it was when I revised it in 1987, so that readers could see how many “futuristic” things actually had come to pass.

One

It was as far back as 1992 that the idea actually germinated, and even then the seed was planted years before. I was ten or so, so it must have been in the 'sixties, when my father, who was a philosopher, mentioned something about the levitation of mystics.

I didn't know what levitation was, and he said, "They tell stories about how some saints go into a kind of trance that's so deep that they rise off the ground."

I, of course, in my wisdom, immediately expressed skepticism, and he said, "Don't be too ready to say that things didn't happen because you don't think they're possible. I'm not saying that it's not just legend; but what if it really happened?"

"But how could somebody be lighter than air just by thinking?" I said.

He looked at me. He had a good deal of respect for me even then, though I wasn't aware of it until later in life; but it isn't every father who would let his nine-year-old son take a college philosophy course just because the son asked him to.

"Exactly," he answered. "The question is how it's possible. It's at least conceivable that he's thinking and concentrating so

hard that he doesn't have enough energy in his body to do it unless he borrows somehow from the energy that ordinarily shows up as mass. If that's what happens, then the person actually would become lighter than air. It's something to think about, anyway."

Well, I did think about it—for all of fifteen minutes—until another of the thousand interesting facts that bombard a ten-year-old came my way. It didn't have any immediate relevance to space travel for me, and so it didn't take first priority in my mind. The 'sixties, you may remember from your history books, were the decade of space, and my father used to say that if my head got any more full of space, it would be completely empty.

But then came the 'seventies with their energy crises, and the suspicion that we didn't have the resources to do anything significant with space travel; and there was the added distraction, for me, of coping with Latin and German at Covington Latin School, across the Ohio river from Cincinnati. All I had time for was an occasional glance at the latest science fiction, while I consoled myself with the thought that at least, by skipping seventh and eighth grades, I had picked up two years, and would be that much closer to designing rockets.

But by the time I got to college, space travel was a question of the Shuttle, and by the time I graduated, there was the calamity of the Challenger's blowing up with the crew aboard. Space seemed more and more like a thing of the past, not the future. As far as I was concerned, the distractions became more and more significant. I graduated as a major in physics, but started following in my father's footsteps in classics and philosophy.

Still, the old interest was not completely dead, and in my spare moments I kept up with the field, hoping that some day I could combine all my interests and somehow use my general philosophical knowledge to further space travel.

By one of those accidents that happen to all of us—the necessity to eat—I found myself in 1991 back at Xavier University in Cincinnati, doing physics once again. It still had a strong physics department, and had ties with the University of Cincinnati, which had had Neil Armstrong, the first man on the moon, on its faculty. I preferred it to the larger university because it was my alma mater, and was smaller and left me a bit freer—and it hired me. Besides, it had kept alive the interest in space travel, in spite of McMurdo's proof, in 1991, that miniaturization had a finite limit, and his conclusions as to the minimum weight that a space vehicle that carried humans could have. It was by that time about three orders of magnitude too great to allow us the luxury of traveling to other planets.

I had decided to see if I could poke holes in his thesis, but it seemed, after a couple of years of research, that he was right. That put paid to any dreams I might have had for establishing a colony on Mars or Jupiter, and creating a society from scratch, like the American experiment, based on rational and sane principles. I had been sure that if I could have actually arrived at some uninhabited place with a group of people who were willing to give a new way of life a try, I could, with my philosophical training, work out a kind of government which would preserve the good points of the United States without the serious problems that had arisen as the millennium turned.

In short, there were about six months in 1992 that I was severely depressed, and nearly lost my job teaching, because all

I wanted to do was mope around our apartment. My sister Michele, who shared the apartment with me, knew better than to console or sympathize; and she kept my job for me by giving me a verbal poke every now and then which would make me angry enough to prepare classes just to show her she was wrong.

One day, when I was complaining about the inexorability of the laws of physics, she remarked (she was in biology herself), “You people think that physics is the be-all and end-all of everything! Inexorable laws! You tell me how a living body can maintain the high energy level it has if the Second Law of Thermodynamics is so inexorable.”

“There’s no violation of the law,” I replied. “You know that. It uses up the energy from the environment, and the net result is lost energy.”

“Sure, I know. But it doesn’t get energy pumped into it; it goes looking for the energy. It’s a system that doesn’t run down; it runs up.”

This led to an hour and a half of typical debate, with each of us fruitlessly trying to make the other see the light, which finally ended when she said, “I see what you’re saying, but what I’m trying to say is that there are more ways that things can be organized than by your five basic forces; and sometimes the way parts are organized is more important than what the parts are.”

She turned to go back to the kitchen, where she was making bread, and I was about to protest that if the organization came out of the parts, then how could it be more important, when it occurred to me that mass arose out of the organization of photons, and that when atoms fused there was a loss of mass,

and I stopped.

I turned to the window and looked out across Victory Parkway at the woods. The way a body was organized affected its mass.

—Mystics sometimes concentrate so much that they don't have enough energy to express it as mass, and they become lighter than air.

Could we alter the organization of a body and control its mass? . . .

"Paul!" I heard a voice in my ear and felt my shoulder being shaken. "What's the matter?"

"What?"

"I've been calling you for ten minutes. Are you all right?"

"Oh. Sure. I just got an idea, that's all."

"You looked as if you were just about to faint. It must have been some idea. What was it about?"

"Well, it had something to do with what you said. It's just possible that we could control the mass of a system."

"Control the m—I said that?"

"Well, not exactly. Dad once mentioned something about mystics, ~~and~~ mystics! You *have* gone off the deep end!"

This deflated my inspiration quite a bit. After a pause, I admitted, "You're probably right. When I say it out loud, it does sound silly."

"Now wait a minute!" she answered. "I know you; you're going to give it up just because I sounded skeptical. How do you know it won't work? I have no idea what you're talking about, but if you don't check it out, then for sure it's not going to work, because if you don't look into it, no one else is going to get the same crazy idea. Look at Newton. So he's

been proved wrong; think of all we've learned because he kept at his idea."

"I'm no Newton."

"That's for sure. But seriously, how do you know? He may be just a guy who got a crazy idea."

I was, I suppose, secretly egging her on to try to persuade me to pursue the subject, because it did sound really foolish, and I hadn't the faintest idea where to begin if I was going to check into it. I needed somebody behind me, and she was hitting just the right note.

The upshot was that I promised not to drop the idea; and so I began fishing in my brain for a starting-place that wasn't absolutely absurd, and hit upon trying to consider what happened when two massless photons collided and produced an electron and a positron, which had mass.

Two

That was 1992, I remember, because that was the year I got serious about physics again, and started my post-doctoral research on mass creation in the electron and proton. It was a good thing it was post-doctoral, because I was on the wrong track for five years, and although I learned a tremendous amount about configurations of electromagnetic fields, there wasn't enough when all was said and done to publish as more than a couple of articles, let alone a Doctoral dissertation.

All of my colleagues thought I was just fickle, because I'd take up a line of research, and just as it seemed to be getting interesting (to them), I'd drop it. A couple of the graduate students, in fact, got their Doctorates pursuing lines of investigation that I'd let go of. I never told anyone exactly what I was looking for, because I couldn't figure out a way of saying, "I'm trying to find a way I can make a rocket ship go into mystical ecstasy and lose its mass" without giving them grounds for locking me up.

Michele knew, of course—more or less—but she had interests of her own; and as time went on, I needed less and less

prodding to keep going. I kept getting hints that there *were* ways that bodies—and especially living bodies—did things that borrowed energy from their mass, and so the idea was in principle possible, at least with very tightly unified systems; and yet though I took aim at this from every angle I could think of, there seemed to be something that deflected me from the target every time. But this sort of thing just makes me stubborn; and so I kept spending more and more time locked up in my room with my big computer on my lap (the nice thing about theoretical physics is that you don't get your hands dirty), filling up disk after disk with junk.

Every now and then, for form's sake, I'd stick the little computer in my pocket and go down to the lab, and wander around a little pretending that I was interested in what the others were doing, and then go back to my chair, flip up the screen, and bury myself in whatever it was that had a grip on me at the moment.

I was doing this one day in January, 1997, when Mike Wang, an old friend from grammar school who'd just joined the faculty a year back, and who couldn't believe I was simply fooling around, came over from his bench to the armchair I'd brought into my cubicle, looked at me strangely, and sat down at my desk.

“Say, Paul, you know that last set of equations you showed me?”

“Yeah. What about it?”

“Did you realize that you could create a circuit based on them?”

“That's kind of what I had in mind. But I can't see that it'd do anything.”

“Yes, but look at this. See this square root here? You took the positive square root, and left out the negative.”

“Well sure. This represents the internal electromagnetic field of the system that’d be affected by this circuit. The negative square root would lead to the field’s being an imaginary number—it doesn’t have any physical significance.”

“You didn’t work it out with the negative, did you?”

“Of course not,” I said. “Why should I?”

“Well, I did. See, what I noticed was that the amount of this particular square root looked a lot like the energy-equivalent of the mass of the system; and if you take the negative square root, then just exactly the mass-equivalent of the internal field becomes imaginary.”

“I don’t believe it!” I said. There it was. There was the mass-conversion.

“Do you realize that this probably means that this is how the system gets its mass?”

“Mike, do you know that I’ve been working around this particular equation for two years now, because I was sure somehow it was the key, and I never thought to look at that square root?”

“You mean that’s what you were *looking* for?”

“Look, look look!” I said, going back three pages in the equations he had been showing me, my hands trembling so much I could hardly turn the pages. “You know more electronics than I do. This expression here would correspond to a resistor, wouldn’t it?”

He studied the page for a few minutes. “I think so. I’d have to work it out, but it looks like it.”

“Now, suppose you put a variable resistor here.”

“Let me see,” he mused. “It’s kind of hard jumping back to the middle of things. Suppose you doubled this, what’d happen?”

“Here, let me show you. If you double this, then that goes into the triple integral up here, which makes the denominator of this fraction here on the next page—let’s see, I think it’d be four times as much, but anyway bigger—and that plugs in over here where you were looking before—”

“And increases the square you took the square root of! If this actually could be translated into a physical circuit, this’d take away—how much? but who cares?—it’d be a chunk off the mass of the system!”

“And theoretically, if you had a variable resistor there, you could control how much mass the system would have!”

He looked at me. “You can’t be serious,” he said.

“It sounds fantastic, doesn’t it? But after all, the mass is just a way the electromagnetic energy is configured inside the system, really; it isn’t something added to it.”

You *are* serious!” he said.

“I think you can see why I never really told anybody what I was looking for. You can’t believe it when you’re the one who finally found it.”

“You think it’d work? Really? I mean, physically?”

“I don’t know. Those equations *look* like the equations of a circuit, but I never tried to build one, because it didn’t look as if it’d do anything.”

“Can I try it? I was looking at the figures this morning, and it seems pretty straightforward. And after all,” he added, in a tone that seemed to say he’d like a share in the fame he foresaw, “I did see that negative root.”

It is interesting how at such moments a possessiveness takes

over one. This was my project, really, and now any papers that would be published would have Blair and Wang as their joint authors. Why else had I let no one in on what was on my mind for the past six or seven years? It's one thing to get a hint from a colleague and acknowledge it in a footnote; it's another to make him a partner.

He saw me studying the situation, and didn't say a word. We both knew enough of each other that if I said, "No, I'll work it out myself" he wouldn't take advantage of his greater skill in electronics and beat me to making the circuit and the credit—but it meant the difference between a friendship and a purely professional relation.

"Be my guest," I said finally, and a trifle grudgingly. "I'm no good with a soldering iron."

A couple of days later, Mike called me over to his table, where he had a crazily-wired contraption attached to a couple of wires with alligator clips. "I didn't want to put it into a box," he said, "because I want to be able to get at the parts in case there're changes we have to make. Here's the variable resistor." He showed me a knob.

"Have you tried it out?" I said a little breathlessly.

"Not yet, of course. That's what I asked you to come here for."

"Okay, you attach these clips to something. What are you using for power, by the way?"

"This," he said, showing me a penlight battery on the underside of the board. "I wanted to keep it out of the way."

"That little?"

"Oh, it's more than enough. There's very little energy in the

circuit itself, if you look at it. *You* know that; you wrote the equations.”

I took his word for it; considerations like how much energy the circuit would need hadn't been uppermost in my mind at the time.

“Let's try it on the pan of this scale,” he said. “It's pretty sensitive, and that way, we can measure what happens.”

“If anything.” I was afraid to actually test it, but I attached the clips to the pan. “Go ahead,” I said.

Nothing—or was it? “Let me adjust the resistance,” he said, and it did seem that the needle moved a trifle.

He looked at it. “That's funny; either it ought not to do anything, or the effect should be a lot more than just that.”

“I'd guess there's some extra resistance in the circuit someplace. Let me see your wiring diagram.”

We studied it for a while, tracing the intricate pattern of wires, transistors, capacitors, and resistors. “What's this capacitor for?” I asked finally.

“That regulates this over here,” he said. It seemed all right. “Oh, wait a minute! This bottles up the current in this little loop. See, we need a—okay, give me fifteen minutes or so.”

“I'm calling Michi. I want her to see this.”

He turned his head from the circuit board and looked up at me, then turned back.

When she finally answered, I said, “Mich, could you get over here for a few minutes? Something's happened.” She began to make concerned noises, and I said, “No, nothing bad—I hope, anyway. But we need you, if you can manage.”

“Mike,” I said after she had agreed, with some concern, to come; I had never called her like this before. “Have we got

something fairly heavy around that we could use for a dramatic demonstration?”

“Keep your shirt on,” he said. “I don’t know if this’ll work at all now.”

“It will,” I said with a confidence born of a desire to impress. “Let me see.” I pulled out the computer, and studied the diagram with the new shunt in it, putting in figures. “Well, it’s too complicated for this little pocket model, but I’ve got an order of magnitude I think—I can see more or less the results on the scale when we didn’t have the shunt, and now we should be able to reduce the mass of something fairly heavy almost down to zero.”

“Alf has a block of lead someplace that he was using for a shield. It should weigh about twenty kilograms. Is that too much?”

“That’d do fine. Where is it?”

We couldn’t ask him, because it was semester break and he’d gone back to Australia to catch up on an extra summer. I rooted around over by his station and found it. It was a hollowed block about the size of one of the cinder blocks on the wall, and weighed as much as a loaded suitcase. If we could make this as light as a feather, it would certainly be impressive.

The temptation to try it out before Michele got there was enormous, and Mike and I discussed it at some length; but it was my project, and I opted for the suspense on all our parts.

Finally she arrived, saying as she came in the door, “What happened? I had to leave Ellen with the new porpoise, because she’s sick—the porpoise, I mean. Oh, hi, Mike.”

Mike nodded. Both of us were toying with the circuit, apparently very busy. I said, “Mich, could you move that block

over a little closer? I can't let go of these for the moment."

She dragged it across the table with some difficulty, and I attached the clips I had in my hands to each end of it.

"Okay, Mike," I said. "Turn it on, and see if anything happens this time."

—And of course nothing did. "Damn it, now what?" said Mike. I *knew* we should have tested it first!"

"Don't get excited," I said, excited. "It should work. Did you check your soldering?"

He looked over what he had done. "Oh, boy, where does this go?" he muttered, and studied the diagram. "Okay. I know what happened." He took up the soldering gun and the solder remover, and spent a couple of minutes, and then said, "Now!" and flipped the tiny switch.

The block of lead shuddered slightly, rose slowly off the table, and did a little gyration in the air, tugging gently at the wires attaching it to the circuit board.

Michele looked at it, then at me, and then at Mike, then back at the block. "I don't believe it," she said.

"It's having a mystical experience," I said.

"A what?"

"Remember years ago, I mentioned that Dad had said that mystics might rise off the ground because they borrowed from their mass to concentrate? Well, there's what ecstasy is, physically."

"Really?" she said.

"What're you talking about?" said Mike.

"That's what gave me the idea," I replied. "Always listen to your father, even if he's a philosopher."

"You mean you've got the way to make rockets that'll actu-

ally take us into space?” Michele said.

“Rockets?” said Mike.

“That was what was in the back of my mind,” I told him. “With something like this on a rocket, we could lift any payload we wanted to anywhere we wanted. We could send a mission to Mars with a skyrocket.”

The two were silent, thinking of the implications. “We could ship anything anywhere, with practically no energy. And with next to no mass, crashes wouldn’t do much damage!”

“How low can you get the mass of a system?” asked Michele.

“Theoretically,” he answered, “down as close to zero as you want, though you can’t get rid of it completely. But it’s hard to say in practice. This thing still has a lot of power left in it, for instance.” He had been looking at the circuit board, and looked up and suddenly stopped. Michele reacted to the look almost as if it had been a slap, and turned to me.

“Will it work on organic things?” she asked.

“I don’t know; I suppose so.”

A thought suddenly occurred to her. “Paul,” she said, “This means that we wouldn’t need elaborate delivery systems for atomic weapons. We could make them weigh practically nothing.”

“Oh, fine!” said Mike. “I see TOP SECRET on this already.”

“What do you mean?” I said.

“Just think of the military applications for a second.”

“But we won’t allow it to be used for military applications!”

“How’d we stop anybody? And even if we didn’t, what’s to prevent the Chinese from using it?” (You will recall that back then, there was concern about China’s belligerent attitude toward us.)

There was another silence. I said, “Which means that we can’t publish this. As soon as it gets known how to control mass, troop movements, weapons shipping, everything that used to be so complicated gets a lot easier.”

“Right,” said Mike. “Like I said, TOP SECRET.”

“Well, if you mean that we let the Pentagon in on this,” said Michele, “and they keep it secret, I’m not so sure I approve. Personally, I don’t think our government has some kind of monopoly on virtue.”

“I wasn’t—” said Mike. “I don’t think this should be used for *any* military purpose,” I said, “and I don’t care who the good guys and the bad guys are. I’d rather bury it now. Look what happened to atomic energy.”

“Yeah, well we were doing the same thing with conventional stuff. What about Dresden?”

“All the more reason.”

“Would you mind filling me in on the logic behind that remark?” said Mike.

“What’s going on here?” said Michele. “What are you two arguing about? Here we are with something tremendously important and terribly dangerous, and instead of trying to figure out what we should do with it, you fight about something that happened in 1940!”

Mike and I both expostulated at the same time, but of course she was right, and after some discussion we realized that we were all agreed on the fact that only the three of us should know about this.

“At least for now,” said Mike, “until we can figure out a way of keeping control and only letting out enough information so it can’t be used for military purposes.”

“If there’s any way to do it,” I added. “That’s what I meant about atomic energy.”

“At least we have the advantage of not having anybody else working along these lines, the way the Germans were working on the atomic bomb,” said Michele. “No one is, are they?”

“Not as far as I know,” I said; “and I think I’d know.”

“Hell,” said Mike, “even I thought I’d seen something that’d take Paul in a completely new direction. I had no idea I’d stumbled on what he’d been looking for all this time. Anybody who’s been interested in his investigations into internal fields wouldn’t have been paying any attention to the production of mass in the system. No, we’re safe on that score.”

After a pause, I said, “Then there’s nothing really to stop us from continuing experiments along these lines, as long as we’re careful about it.” Nobody just wanted to drop everything, and Michele was as eager as the two of us.

“You said it should work on living bodies,” she began, and I interrupted, “Well, I said organic things. The internal field changes are pretty strong, and God knows what’d happen if you did that to something that was alive.”

“Well, here’s my purse; it’s leather. Let’s try it on that and see what happens.”

“It may disintegrate it.”

“Well so what? That’ll tell us something. Let me take my license and money out of it first, though. Turn the circuit off for a minute, will you, Mike?”

“With that block of lead up in the air?” He put his hand out to push it down to the table, and I said, “Wait! Don’t touch it!”

“What’s the problem?” he said, lowering the block and turning off the current.

“Listen!” I said, my heart in my mouth. “We’re going to have to be very careful with this thing! For all you know, the current could have gone through you and blown you up in front of our eyes!”

He looked down at the block and back at me. He was obviously shaken by his narrow escape. “Well,” he said finally, “nothing happened. I did feel a vibration, like when you touch something that has an electrical leak in it, but that’s all. Give me the purse, Michele.” He never called her Michi.

She gave him the purse, and he attached the clips, one on each side, and flipped the switch. It stayed down. “Looks like you’re wrong, Paul,” he said. I’ve got it turned up all the way, and nothing happened.” He took it to remove the clips, and said, “Wait a minute; it feels lighter. I know.” He undid the clasp and dumped out the contents. The purse suddenly slipped from his fingers and shot up into the air.

“Catch it!” I cried. It had broken free of the clips and was about to fall right on the circuit. Mike rather clumsily caught it and put it back down on the table.

“Well now we know something else,” said Michele. “It reduced the mass of the purse, but not what was inside.”

“Evidently it only works on a single system,” I said. “That was why nothing happened to you when you touched the block, Mike. And that stands to reason, now that I think of what’s going on.”

Mike was examining the purse. “Seems perfectly okay.”

“Well that’s one thing in our favor,” I mused. “If you want to reduce the mass of something complicated, you’d have to

attach one of these to every component. That'd probably make it more trouble than it'd be worth—or we could design it, maybe, so that it'd work but it *would* be more trouble than it's worth to get it to work on military things.”

“I wouldn't be too optimistic about that,” said Mike. “But I have an idea. Wait here a minute; I thought Henry Steigerwald got in a shipment yesterday . . .”

His voice trailed off as he left the room and came back with a cage of five white mice.

“You're not going to try it on them!” said Michele.

He gave her a half-scornful look. “Why not? It didn't hurt the purse, and that's what you were hinting at, wasn't it? We have to know sometime, and why not now?”

“I suppose you're right,” she said reluctantly.

He attached the clips to the tail of one of the mice, fiddled with the knob of the potentiometer, and switched on the current. The mouse had been squeaking and biting at the clip, when suddenly, with a little shriek of surprise, it floated up to the wooden top of the cage. When it felt the roof at its back, it flipped itself over, just as if it had fallen down, and began running frantically around the underside of the roof, too frightened to pay any attention to the wire it was attached to.

“Well, it didn't blow up,” said Mike. “Scared as hell, of course; but it looks healthy.”

Michele was examining it as well as she could as it scampered around upside down. “If we could only get it to stay in one place for a second,” she said.

Mike adjusted the resistance a bit, and the mouse began to lose contact with the roof. As it sank down, looking around with a bewildered expression, it flipped back over, and began

flailing the air with its little legs so fast you could hardly see them. It hovered there, swimming in the air, though not making much progress through it, about five centimeters over the heads of its brothers.

“The poor thing!” laughed Michele. She reached into the cage, and I thought she was going to free it, but she got the food dish and held it in front of its snout. This was something it found familiar, and it put its forepaws on the dish and began gobbling up the food, its hindquarters resting quietly on nothing at all. But as it got the food inside it, it began to tilt and then to sink gradually down, until it just touched the floor with the tips of its toes. It could run now, which it proceeded to do, with tremendous leaps (for a mouse) over the backs of the other mice, which were now scampering in contagious fright in all directions. I was reminded of the old films of the lunar astronauts playing in their weightless cabins.

“There you are,” said Mike. “It only works on complete systems.”

We watched, laughing at the antics of the little circus and its Supermouse.

“Look at that!” said Michele. “He’s going up again!” The mouse was gradually losing contact with the ground, and was becoming terrified all over again. “He must be digesting the food,” she added, “making it part of his system.”

For a while the mouse could get back into contact with the ground by bouncing; and as it grew lighter, it used the backs of the other mice as stepping stones, while they bit at it and ran away, knocking it here and there the way children bat an inflated balloon.

Michele was for turning the circuit off and having mercy on

the mouse, but Mike and I agreed that we ought to leave it on for a few days or even till it died, to see if there were any serious problems for a living being in having its mass reduced. After all, if ever my dream of reintroducing space travel was to come true, people would have to wear these things too.

It was fortunate that it was the semester break in January, so that there wouldn't be many people in the lab. I found another cage and put Supermouse in it alone, leaving a note on Henry's desk that we'd borrowed one of his mice. I took the cage and the circuit into my office, and put it out of sight when the door was locked.

It was only after we had cleaned up the place that the three of us began to realize how dazed we were. It was almost as if we'd been in an automobile accident; if the initial shock doesn't immobilize you, you find yourself capable of doing all sorts of things as if everything was normal; and then when the time of action passes, everything hits you at once, and you lose all power to think.

I don't remember even if we said goodbye to Mike or how we got home that afternoon; and it wasn't until days later that it occurred to me—as a kind of abstract proposition—that my internal field-geometry was as fundamental an understanding of bodies as was Einstein's revolutionary view of space-time.

Three

For those concerned about such things, the mouse survived, and in fact lived almost twice as long as normal, to a quite hearty old age. The only trouble we could notice while it was alive was that its prolonged lessening of mass had weakened its muscles to some extent, and in the end it began to hate the “rest periods” I gave it of normal mass; and the autopsy after it died—performed by Michele—revealed considerable interesting changes in the internal organs, but nothing that seemed to be dangerous.

She did a number of experiments on animals, in the course of the year that followed, all, as far as we could tell, without having anyone suspect what was being done, and finally the next April she told me, “Well, I guess it’s settled in my own mind; It looks safe to try on humans.”

We were in our apartment; we had had one room converted into a minor biology lab. “No, you don’t,” I said, aware of what she had in mind. I suppose each of us had been preparing for this moment, because when I produced a version of the circuit, which by this time we had put on a chip and made the size of a dime, that had a watch strap attached to it, she showed

me one almost like it that she had been ready to strap on herself. “I thought as much,” I said. “It was still my idea, and I get first dibs.”

I put on the apparatus, making sure that the tiny contacts touched the back of my wrist. You could adjust it by turning what would correspond to the face of the watch if it were a watch. Very gradually I gave it power.

Suddenly, I felt a jolt through my whole body, and I thought my heart was going to burst through my chest.

“Are you all right?” cried Michele, seeing my face.

“I hope so,” I panted. My heart was still beating wildly, but seemed to be calming down. “This isn’t something for a person with a weak heart to fool around with!” and I described my experience, which she took notes on. “Man! But it’s getting more or less okay now.”

Very gingerly, I added a bit more power, and began to get that sensation you have when your car tops a rise at high speed, except that it was sustained. My heart seemed all right, except that fear, I suppose, was making it beat fast; but it didn’t give that enormous leap inside me again.

I was still on the ground, but almost lighter than the surrounding air. Very carefully, so as not suddenly to hit the ceiling, I twisted the face of the instrument.

It was just a trifle too much, and I flew upward, though not fast, and gently bumped my head, and then ricocheted down, barely touching the floor with my feet, and then back up and down for several minutes, until I finally came to rest with my feet about a meter off the floor.

“How do you feel?” said Michele, half laughing, but with a worried look.

I was gasping for breath. The air in the room had suddenly become real and thick to me, like an ocean I was submerged in, and I had the feeling I was drowning; but that began to subside as soon as my body realized it could breathe this liquid.

When I could speak, I said, "I think . . . I'm just scared, mostly . . . it's not like being up in a balloon or anything, because there's nothing to hold you up, and you feel you're going to fall." And I described the drowning sensation for the record. It felt vaguely familiar, however, and it was only later that I realized I was associating it with some dreams I had had (which I discovered were rather common), where I would move my arms in a certain way and rise off the ground and float.

As I grew used to being up in the air, it began to be rather fun, and I was experimenting to see if I could move around by swimming; but the air was so thin that, even though I was practically massless, it was not very successful. I could rise a little by treading air, and was trying this out when the furnace went on, and a current of air blew my feet from under me and sent me flying like an arrow toward the cold air return. I went crashing into a lampshade, and grabbed frantically at it as I bounced off.

"Turn off that damn thing!" I shouted, feeling like an idiot, holding onto the shade for dear life and fluttering in the breeze like a flag.

Michele could only shriek "If you could see yourself!" between fits of laughter, rolling on the floor. I screamed that it was no joke, but she was helpless; but the thermostat decided after a minute or so that that torture was enough, and when the wind died down, the weight of my shoes brought me back

to an upright position—which has a great deal to be said for it, all things considered.

I felt my shoulder. “That lampshade felt like steel,” I said. It was heavy paper.

“I imagine it would,” said Michele, wiping the tears away. “You’ve got to weigh less now than a speck of dust; you couldn’t have done it any damage no matter how hard you hit it. Did you hurt yourself?”

“It doesn’t look like it,” I said, moving my arm around. “But I’ll bet there’ll be a nice bruise there. Look, see to that thermostat, will you, so this doesn’t happen again.”

“Okay, but you come down now,” she said as she turned it down. “It’s my turn.”

“I think before we do any more of this, we’d better get a fine-tuning adjustment on—”

What cut me off was that the door opened. I was standing with my back to it, and suddenly felt as if someone had punched me in the solar plexus and simultaneously grabbed me by the seat of the pants. As I flew, doubled and rear-end foremost, through the door, I caught a glimpse of Mike Wang, one hand on the knob, dodging the flailing arms and legs as I shot by, and saying, “What? What?” his eyes round as a Caucasian.

“Catch him!” cried Michele. “He’ll hurt himself!” But he was too stunned to move, and I was too doubled up to grab him as I went by, down the corridor.

He had left the corridor door open too, which was what caused the wind in the first place; and the gentle April breeze blew me like a tornado out into the open air. I could hear Michele running after me shouting, and then Mike’s voice

right behind her. I didn't dare try adjusting the mass-reducer, for fear I'd either crash into the ground with my full weight, or go sailing over the rooftops, and there was nothing at the moment to grab onto.

Across the street I flew, still about a meter off the ground, but beginning to climb as the wind currents began to go round the buildings on the other side. It blew me between them, over an outdoor basketball court by one of the dorms, and I yelled to our seven-foot senior "Grab me!" as my feet sailed past his head. He dropped the ball and stared. I reached for the basket, but missed.

There were trees on the other side of the court, however, and I was able to grab a limb of one of them before I got blown in among the branches, turn off the mass-reducer, and drop to the ground. I walked back across the court, with my legs like jelly, without saying a word to the students, who gave me a rather wide berth. I noticed later a rather different attitude in my classes—not that they studied any harder, unfortunately.

Mike and Michele were waiting back across the street, so that no explanations would be needed, and the three of us went back inside.

"A few adjustments are in order," I said shakily, once I had taken the fiendish machine off and sat down with a drink. "And locked doors, and no furnaces."

"You ought to know better than to try something like that without me around," said Mike.

"Well, it was either do it myself or let Michi beat me to the punch," I answered. He gave her a look which could have been either concern or contempt. In spite of the fact that he was born here, he seemed to have inherited something of the

Oriental inscrutability along with his looks—certainly as far as Michele was concerned.

“What I want to know is about that first feeling you had with your heart,” said Michele. She had got out the sphygmometer we keep in the cabinet and was strapping it on my arm. “Blood pressure’s 128 over 72, which is fine,” she said. “At the moment,” she added, wrapping up the instrument. “What was it like?”

“Well,” I answered, “I’ve never really had a violent electric shock, but it felt something like what I’d expect that to feel like. My heart gave two or three tremendous beats, and something went all through me; but then it settled down. It came all at once, too.”

“That would account for the shudder the mice and the chimp gave when we hooked them up,” she said. “It didn’t seem dangerous to them, though.”

“I wouldn’t think it was dangerous, exactly,” I said; “any more than a violent scare would be. It’s the same kind of sensation.”

“I have to try it. Now wait a minute!” said Mike.

“Oh, come off it, Mike. You know you’re going to try it yourself in a minute. I at least have some purpose in mind. Check the thermostat, will you, Paul?”

With some misgivings, I saw her strap on the mass-reducer and twist the dial. Her eyes widened suddenly, and she took a couple of deep quick breaths as she rose off the ground. “You’re right,” she said. “It’s not so bad, especially if you’re ready for it. But what a wierd sensation!”

The rest of the day, and for that matter, the week afterward,

was interesting for us, but would be tedious to put down here. There were no more adventures like flying over basketball courts; but we learned a lot.

Things settled down for most of the rest of that semester; except for the strange looks I mentioned that I got in class, we seemed to have kept our secret intact. No one ever said anything to me, and neither Mike nor Michele reported that anyone had any suspicions.

Some time in early May, however, Mike went off to an astronomer's convention in Washington (he had mainly been in astrophysics), and asked me to take over proctoring his final exams while he was away. This left me too busy to do anything until he came back.

He seemed rather preoccupied during that hectic week when all the tests had to be graded and marks turned in; but I didn't put it down at first to anything more than having to catch up. But the day after everything was done, he came over to my office, sat down on the side of the desk, and said, "Paul, do you remember Keith Jackson?"

"Jackson? Jackson?" I said, thinking over students I had had.

"The kid that used to live down the street from you."

"Oh, him. Yeah. I haven't seen him for—twenty years, I guess."

"Neither did I since we left Summit Country Day—until last week in Washington. I think he's in the CIA now."

"Oh yeah? Was he wearing a cloak or something?"

"I'm sorry, Paul, but this isn't going to be funny. He's in something in the government that's connected with secret operations of some kind, and apparently that flying episode of yours was noticed, and somebody's been asking questions and

finding out that the three of us have been spending lots of time together—with a bunch of animals and circuit diagrams and so on.”

“Good God! They haven’t got hold of any, have they? We’ve been so careful!”

“I would guess not. I mean, it’s impossible to get a meaningful sentence out of him, but why would he have looked me up specially and been pumping me the way he did if he already had it? And did he pump me!”

“Did he get anything out of you?”

“I don’t think so—nothing that he didn’t already know. I admitted that you’d flown over the basketball court, but I didn’t say I knew how you did it. He didn’t believe me, of course, but what could he say if I just denied it and asked him why he wanted to know?”

“Wait a minute. Let’s get Michi in here. This could be serious.”

I called her lab, and in about five minutes she came in, still in her lab coat. “What’s the problem now?” she asked, and I told her. She looked over at Mike a little skeptically, and he said, “Don’t blame me! It was your beloved brother that let the cat out of the bag if anyone did.”

“I’m not blaming anybody,” she said.

“No, you never do.”

“Okay, you two,” I broke in. “The question is what are we going to do about it.”

“Well, you know, Paul,” said Mike, “I was thinking about this on the flight home, pretty hard. I don’t think realistically—especially now—we’re going to be able to keep mass reduction a secret forever. Who knows but what this room is already

bugged?”

“That *is* a thought. Where can we go?”

“Look,” said Michele, “if it’s bugged they already know we can reduce mass; and we’re certainly not going to be saying how we can do it in a conversation. There’s no need to go anywhere.”

“I suppose you’re right,” I said.

“Yeah, but like I said,” said Mike, “I was thinking on the way home and—and I hope they do hear me now, whoever they are—we might be able to finagle something if we play our cards right.”

“What do you mean?” I said.

“Well, look at it this way. We’ve got to where we’d need to do really extensive testing on this mass-reducer, and not only don’t we have the money, we’d have no way to keep it secret. Now these clowns have money like you wouldn’t believe, and they know how to do things without anybody finding out.”

“And they’re connected with the military, no doubt,” I added, “and what’re we keeping this secret for if not to keep it from military uses?”

“Keep your shirt on. Suppose we let them know enough so that they can see what we’re doing, and even give them circuit diagrams with a few vital components left out—I think I can see where to do it—and we get in on testing things, but keep the real secret to ourselves. Then we can get them to do our testing for us. We’d have to supervise the photographing of the chips, of course, and make sure they never got out of our sight, but I imagine that could be done if we gave them a kind of ultimatum and stood together on it.”

“I don’t know, Mike,” I said.

“It’s either that, the way I look at it, or have them on our backs for the rest of our lives; and eventually we’ll make a mistake and they’ll find it out. This way, we can keep control and maybe make them see that certain uses of this would be worse than Hiroshima.”

“That almost sounds sensible, Mike,” said Michele.

“Surprising, isn’t it?” he quipped.

“Now that you mention it,” she said.

“But that isn’t all I’ve been thinking. You remember you said something once about space travel, Paul?”

A light dawned. “Yes,” I said. “So what?”

“Well, I’d always had it in the back of my mind, too; but I gave up on it about ten years ago. But of course with mass-reducers, the whole thing would be a perfect cinch. I’m willing to bet there’s an old Apollo space module hanging around somewhere, and there’s certain to be one of the old rockets in mothballs. If we could talk these guys into arranging for us to use that for a tester, then we could fly all around the solar system on the fuel in one of those things. We could stay up for months! And they’d have no security problems with the two of us up there, and down here only Michele to worry about—”

“Hold it right there!” she broke in. “What makes you think I’m just going to sit here knitting while you two go on a junket around the universe?”

“What difference does it make?” I said. “We’d never be able to persuade them.”

“Don’t be too sure of that,” said Mike. “There were a couple of lectures at the meeting there about some radio signals that looked like what those kooks have been listening for—you know, not natural bursts of noise, but patterned, and very

faint—coming from of all places Jupiter, and probably the Great Red Spot.

“Now as far as we know, that planet is nothing but a sea of hydrogen and some methane and ammonia, and the Red Spot is just turbulence; but nobody really understands why it stays more or less the same. Anyhow, I put out a feeler that wouldn’t it be interesting if something or someone could actually get down into it to find out if there’s intelligent life there—and Keith actually sounded interested.”

“Intelligent life!” I said. “Good God, Mike!”

“Well what the hell,” he said. “How’s he to know? How’re we, for that matter?”

“In liquid hydrogen and methane? On a planet where we’d weigh a thousand tons?”

“Exactly. If we had our present mass. See, the neat thing about a non-scientist is that he has no idea that something like this is absolutely ridiculous. I mean, those guys will believe anything at all is possible, as long as a scientist says it is, and especially if the scientist can show them a forty-page equation. And as a matter of fact, we *could* get into Jupiter’s Red Spot, and we *could* look around and see what makes it tick. So they think we’re looking for intelligent life. Let ’em. It won’t be the first scientific expedition that came back with results that weren’t what it was looking for.”

“I think it’s worth a try, Paul,” said Michele. “I suppose this Jackson person is going to get in touch with you?”

“Oh, he’ll be in contact. He didn’t say how, but he made it very clear that we’d be hearing from him—and that he was to be hearing from us.”

“Okay, but there’s just one little detail,” she said. “Those

Apollo modules, as I recall, hold three people, not two, and—A—you're not going to let anyone else in on this, if I can help it, and—B—I have no intention of staying home and letting you people have the fun.”

“Fun! It'll be the most dangerous—”
“And what does my sex have to do with that? That was thrashed out thirty years ago, Mike. There's nothing that a woman can't do in those space ships; there were even women astronauts or whatever you call them back in the days of manned space flight. Besides, suppose there is life there on Jupiter; you'll need a biologist along. Nope. I'll grant that it's all a dream and we'll never get off the ground, but if it's a dream, I'm dreaming along with the two of you.”

“Look, Michele, be sensible!”

“Sensible! The whole idea is crackbrained! I personally think it's *so* crackbrained it just might work. But don't *you* go telling *me* to be sensible!”

“For heaven's sake, you two!” I said. “What's the point of fighting about something that's bound never to happen?”

But they fought, of course, nonetheless, for several hours. That brought the afternoon back to normal.

Four

We had several strategy sessions in the next couple of weeks, coming up with all sorts of ideas on how to manipulate the situation—none of which actually turned out to be of any use. Anyhow, they all seemed to end in Mike’s being determined to keep Michele off the mission, and she just as adamantly refusing to be left out. He even spoke privately to me about it, as if I could “make her see reason,” and since I didn’t see whatever reason Mike could see against it, he didn’t get very far. Finally, he seemed to write us both off as hopeless, and didn’t bring up the subject any more.

What happened, once we saw Keith Jackson, is that the secrecy people, whoever they were—I still don’t know what the organization actually was, except that it had contacts all the way up to the President (we verified that, and actually met him)—outsmarted themselves. They were convinced that the three of us were mad scientists, like Dr. Frankenstein, and that our threats to let the world know about mass-reduction unless we got our way might actually be carried out.

As it happened, of course, the test we proposed was the kind of thing they wanted to find out too. What would happen to

a rocket equipped with these mass-reducers? Could you actually get it so that a gallon of gasoline would make it do what hundreds of tons of liquid hydrogen and oxygen used to be needed for?

And Jupiter, with its Red Spot, was just as romantic a destination for them as it was for us. I suppose they had other reasons they didn't let on to us about.

At any rate, after about a year of negotiations, he agreed that we could have absolute charge of production of the thousands of mass-reducers of all sizes and strengths that would be needed for every component of the rocket and space craft—and space suits and so on for us. This was no real problem, since with a single pocket computer, with parallel processing, we could change the size of the circuit from (using proton photography for it) about what you see as the period on this page up to (with regular light) a centimeter or so in diameter—which was bigger than needed, but most were this size so they could easily be kept track of—and besides, they were cheap.

Since it would have been at least theoretically possible to analyze the circuit if it got into the wrong hands (though it would have taken years, because it was a three-dimensional one), we had to be sure that any mistakes got smashed beyond recognition, and that we three were the only ones who tested the circuits once they were attached.

There was supposed to be a Venus flyby from earth, using one of the last of the Saturn V rockets; and we managed to divert that to our own project. Some astronomers, who were interested in Venus, complained that the project was changed, but our people put out an explanation that the rocket was too

old to hold the heavy equipment and that a delay was necessary to see if with more sophisticated equipment we could take advantage of Jupiter's favorable location. This quieted them down, except for one, who kept writing letters to the editor of whatever publication would accept them about the miseries of getting involved in government projects.

What really amazed me is how many people there are who can be at work on a project, and really interested in it, and not have the faintest idea of what it is they're working on—or for that matter, how many people there are who are for practical purposes running the whole project and giving approval to this and that and the other, and who are being led by the nose. Really. It is frightening to see how few people need to know anything about something that thousands of people are working on, and which costs millions of dollars. No wonder Hitler was able to do what he did.

The only snag we ran into was from what was to me a totally unexpected quarter. One day, Keith Jackson came up to me and said, "Well, we've completed our checks on all of you, and as far as we can tell, you're all right."

"Well thanks," I said. I couldn't stand him, and it was always hard to keep my feelings to myself. I knew, of course, that we'd had to have had security checks, but the tone he said it in—as if our passing surprised him a little.

"You've known Dr. Wang ever since you were kids, haven't you?"

"You don't need to have me answer that. You were in the same school with us."

"Well yes, but I wasn't his friend."

Or anyone else's, I thought. Well, you're in the right

business. “What’s the problem?” I asked aloud.

“Well, he’s Chinese, you know.”

“Good God! He’s no more Chinese than I’m Argentine! He was born here! The fact that he’s got almond eyes and a flat nose has nothing to do with anything you’d be interested in. He’s genetically Chinese, but loyalty to a country is not a genetically transmitted character.”

“As I said, he’s perfectly all right, as far as we can tell. But there are a couple of people who are a little—um—concerned, especially since we found out that this project was ~~his idea~~—” ^{Now wait a} minute! *You* were the one who approached *him*. If it hadn’t been for you, he’d never have thought of it.”

“Well, it didn’t exactly happen that way.”

“What do you mean?”

“It’s true that I came to him and asked him to talk about the strange events that were going on around your lab: that accident you had on the basketball-court after suddenly becoming very close-mouthed to your colleagues, and then the mice disappearing, and behaving in *very* strange ways in your apartment—”

“How did you find that out?”

“Well . . .” There was no way I’d ever like him. “And after all,” he went on, “he is Chinese—genetically, as you said, but Chinese—and, you see, we wanted to find out what was going on.”

“And you found out.”

“Didn’t we, though? To an extent. You three have a commendable sense of secrecy. We’ve tried experiments to see if your methods or procedures or even your theoretical calculations can be discovered, and up to this point, we’ve assured

ourselves that they can't."

"By trying to steal it for yourselves. Brother!"

"What trust, eh? Well, life involves trust, but we want to be sensible too."

"Well let me just mention that even if our computers happen to disappear temporarily from our pockets, there are parts of the program that have to be put in every time and that exist nowhere but in the heads of the three of us."

"We know."

"Whose?" I asked, turning on him.

"You can't expect us to tell if you—why not? All three of you. We've had more practice than you have; you're pretty naive, you know, in many ways, and we find it somewhat amusing at times, if you'll forgive us. But you've got the basic, simple idea that always works. Keep it memorized and never write it down. And we're keeping an eye open so that our greater experience can help keep anyone else from taking advantage of you. We want you to succeed as much as you do. I mean, we know you're using us; but just be aware of the fact that we don't mind being used, as long as we're both using each other.

"But of course, we'd very much resent it—very much—if we were being used for a space voyage that ended, say in the Gulf of Tonkin. Are you absolutely certain that *you* aren't being used, Paul?"

"By Mike? Of course. Absolutely."

"Don't just react, now."

"Oh, stop it! I've known Mike ever since we were four years old. He's never held anything back from me, or been evasive, or anything. Mike isn't that way. I could suspect Michele of

something easier than I could Mike.”

“All right. You have to remember that we don’t know him as well as you do, and we see the dangers as clearly as you do—a good deal more clearly, probably. We aren’t as easily convinced. And because we aren’t, I want to mention the real reason I had this little chat with you.”

“What’s that?”

“Those old rocket ships always had on them something that would allow the ground crew to abort the mission if anything went wrong. We haven’t taken that capability off the Saturn you’re going to be going in—and I should add that it’ll be in a place where you can’t get at it once the launch occurs.”

“I see . . . Well, all I can say is you won’t have to use it.”

“I’m sure we won’t. I just wanted to let you know, if you see some special guards around sometimes.”

“I can spell ‘Tuesday.’”

“You what?”

“Skip it. You want me to tell Michele and especially Mike about this.”

“It wouldn’t hurt, and it might sound better coming from you. You can put the blame on us, that’s perfectly all right; but I won’t have to stand there and take it for what’s undoubtedly an unnecessary precaution.”

“All right; I see your point of view. Of course you know that we’re taking along with us everything about the mass-reducers that we don’t burn; so if the mission is aborted, it’s as if they’d never been discovered.”

“That’s very unfortunate. But not as unfortunate as some other possibilities.”

Of course I told Michele and Mike right away, and Michele laughed and Mike fumed. But there was nothing to be done, and so we went ahead with the work.

It was fascinating to watch the attaching of the mass-reducers to the various parts of the rocket and its instruments. It was done during inspection, of course, and most of the time was under the guise of an inspection seal. All of the larger components had reducers that could be turned on and adjusted from a special console that Mike had designed, with a computer I worked out and had built by an outsider (which occasioned some nervousness, until I proved that it was just a complicated switching device); but the small instruments needed reducers that were so tiny they had to be always “on,” and the assembling of them was quite tricky. We had to do it ourselves after hours (fortunately, there wasn’t much of it), and we spent a frustrating two weeks at the start of this phase of the operation, picking instrument needles and so on off the ceiling when they slipped out of place. We finally built a shelf on top of the work bench, put a light under it, and used the underside of the shelf as our bench; and then, thinking of up as down, we began to make real progress.

In the end, the most delicate instruments were left with most of their mass, with just the casings reduced; because with the control we had of the basic ship and the larger parts, we could still make everything, us included, weigh less than ten grams on Jupiter if we wanted to.

One of our checks was to weigh everything with the mass-reducers on when the workers had left, but before they were allowed out of the building (They hated the wait, which they saw no need for). Toward the end, we hurried through

this phase, which was a double check anyway, and nothing had been missed in two years.

But one day, when everyone had left, I looked at something Mike had on a scale, and said, “Mike, isn’t that gyroscope too heavy?”

“No, it’s—no wait. You’re right! Oh, God! I wasn’t paying any attention! Who was working on this?”

I flipped open my computer and looked at the files. “Janice. Janice Jones.”

“That’s right. She handed it to me just before she walked out, but I had fourteen or fifteen other things to—where is she?”

“Get Keith!” I pushed the button on my computer to call him.

“No, wait. Get her.” Mike pulled out his computer, when it rang.

“Dr Wang?” came a voice when he answered. I was listening in on mine. “This is Janice Jones. You know, the one who works at the third assembly table—”
“Yes, I know.” He sounded calm, but he swallowed silently.

“Dr. Wang, I know this is funny, me calling you like this, but something funny has happened, and—well, I thought you might be able to tell me what happened.”

“What happened?”

“Well, I left like always and took the bus home, and everything, and everything was just like always, and I got home, and I was going to take a bath, and I ran the water in the tub and everything, and turned on the TV, you know, because my program usually comes on just after I get home, and I like to watch it in the tub, you know, and anyway I was just taking off

my blouse when I noticed that it felt kind of light-like, and then when I got it off, it kind of floated, sort of, and I got scared and let it go, and there it is on my bathroom ceiling and I'm scared to go in the room."

"Janice, I'm glad you called me. Janice? Are you there, Janice?"

"Yeah."

"Listen, Janice, don't touch it."

"I can't. It's on the ceiling. And anyway, I wouldn't touch it with a ten-foot pole!"

"Well don't. Not even with a ten-foot pole. And don't let anybody into your place until I get there."

"Oh, Dr. Wang, is it going to explode or something? Because the TV's in there, and I'm missing my program, but I'm scared to go in!"

"No, it's all right, you're safe enough; only don't touch it. Better yet, keep out of the room altogether, just to be sure. I think I know what's wrong with it. It's okay as long as it stays up there, but if it falls down—well, just stay out of the room, that's all."

"But what about my program?"

"Go to a neighb—no! No, you just stay there until I come. I'm sorry about your program, but it can't be helped."

"Well, okay if you say so. Can I listen to it from the door?"

"Oh, sure. In fact, that'd be a good idea. You sit there at the door and listen, and keep your eye on the blouse in case it falls. I'll be there as soon as I can. Where do you live?"

She told him. It was only a few blocks away, but we decided driving would be quicker.

"This has got to rank right up there with you flying over the

basketball court,” said Mike as we got into the car. As he closed his door, he added, more or less to himself, “It would be Janice.”

“Oh?” I said. “Do you know her?”

He looked down the road as he pulled the car out. “Not so you could say ‘know.’”

“She couldn’t have stolen it and photographed it and then called in case we missed it, could she?”

“Janice? From what I know of her, she wouldn’t be able to point the camera in the right direction.”

“It does sound rather far-fetched. But you wonder.”

“You’re letting Keith Jackson and his minions get to you. How would *you* feel if your shirt suddenly took off for the ceiling?”

“I suppose. She sounded the way you’d expect.”

When we got there, she looked the way you’d expect: terrified. Mike pacified her, while I went and got a chair and took the blouse down. It was easy to find the mass-reducer because one side of the blouse was lighter than the other. It had attached itself to the underside of the armpit.

Just as a precaution, I told her we’d have to take the blouse away, but that we’d have it back to her tomorrow.

“You can have it!” she almost shrieked. “I wouldn’t touch that thing with a ten-foot pole! I never want to see it again! I never liked it anyway, and I only wore it to work because I don’t care how I look at work. But what *happened* to it?”

“Well . . .” said Mike, and I broke in with the speech I had been preparing in the car, “It got an extra big charge of static electricity, that’s all; you know, the kind of thing that makes sparks when you take your clothes off?”

“Really?” Her eyes widened. “Can static do that?”

“Only if there’s a lot of it. Haven’t you seen balloons stick to the ceiling after you rub them on a sweater?”

“. . . I guess,” she said a bit dubiously. “Of course, it always did have a lot of static in it. You could see the sparks sometimes if you took it off in the dark.”

“I’ll bet you felt a real tingle this time when you took it off,” I said, planting a suggestion in her.

“You’re right!” she said, as if she recalled it. “It almost felt alive!”

“Then that’s got to be what happened. I noticed all the electricity in it when I touched it on the ceiling, and I discharged it on my way down. What must have happened is that when you took it off, it felt strange, and you threw it up in the air instead of dropping it, and it hit the ceiling and just stuck there because of the electricity. It’s perfectly all right now, actually.” I dropped it on the ground, and then picked it up; without the mass-reducer, of course, it behaved like a normal piece of cloth.

“Well, how do you like that?” she said, a little disappointed. “And all the time I thought it was something you guys were doing with them little chips we’ve been putting on the instruments.”

“How could they make it fly?” I said. “You never saw any of the instruments fly, did you?”

Of course she shook her head, because the only reducers that anyone else but us put on were the kind that could be turned on and off; this one must have slipped off some component we’d already dealt with.

“Those things are just inspection stickers,” I lied. “We’ve got

to be sure every one of the components on these old rockets are checked, because they haven't been used for so long, and the government is too cheap to buy new parts for us."

"Oh," she said. She could believe that the government was cheap, all right. "But then why did you get all excited when I called you?"

That was a poser. Mike broke in, "We suspected that there might be some pretty high charges built up. They wouldn't really be dangerous, or anything, but we didn't want to get anybody scared and quit. You know how it is. If you'd come in tomorrow and told everybody what happened, we wouldn't have anyone working for us Thursday."

"Yeah, well anyway you ought to let people know about things before they happen. I coulda had a heart attack."

"Oh, come on now!" he said. "A live wire like you? Why you're pretty shocking anyway; what's a few more volts?"

She didn't get the pun, and was wondering whether to take what he said as an insult, when I said, "You know; shocking. Bzzt!" and held out my finger.

"Oh. Oh, yeah." And she made a rather feeble attempt to laugh. "But it's really okay? I mean really?"

"Of course, Janice. Don't worry about it."

"Well," she said, glancing at the clock, "I know you guys are busy, and . . ." she let her voice trail off. Another program must have been about to start.

"Sure, Janice," said Mike. "We'll see you tomorrow. And I'll have that blouse for you."

"Okay, but never mind the blouse. I wouldn't touch it with a ten-foot pole." she said, and turned back to the bathroom as we started to leave.

“Well,” I said as we drove back, “if she’s a spy, she’s got to be the smartest one I ever heard of to act that dumb.”

“A spy? Not a chance.”

After a pause, I said, “I suppose we’ll have to tell Keith anyway.”

“Oh, for heaven’s sake, why?”

“She’s bound to talk about it, and if he hears and we didn’t tell him, he’ll think something’s fishy. You know him. The poor thing; she’ll have a tail three miles long now, no matter where she goes.”

“That won’t bother her, especially if she finds out about it . . . Well, it could have been a lot worse.”

“I’ll say,” I said. Then I added, “It’s a shame it had to happen to you, Mike.”

“It could have happened to anybody. No matter how careful you are, those things float around so much that it’s next to impossible to keep track of them.”

“Yes, but we’ll have to be twice as careful from now on. Once we can explain, but not twice. Thank God we’re almost at the end of this!”

“Well, what’s done is done.”

“I hate the thought of facing Keith. He won’t like it at all.”

And he didn’t. He didn’t at great length. He must have debriefed Mike and me four times about every last detail of what happened, every word that was said, with all the phrasing and accents, and whether anyone could have used the chip to copy it between the time she left and the time we got there. Clearly, no one could have substituted anything. We finally agreed that something of it could have been copied, but that the really important part of the circuit was buried so deep

inside it that you'd have to take a couple of days to get at it, and even then it would only be a ten percent chance you'd actually learn how it worked.

"As you must know by now," I added. "I can't believe you haven't tried yourselves; we can't be everywhere, and you must have 'borrowed' one for a few days to see what you could see."

"You're a little less naive than you used to be, aren't you? Well, to be perfectly frank, I don't think there'd be any damage in that short time, and considering we know we have the original back, then even if Mike and she were in cahoots on this together, your appearance on the scene would have ~~been~~ ^{How on earth could they} be? How could he have got in touch with her at the very moment I was noticing the difference in weight?"

"Exactly. But even *if* anything like that went on, there wouldn't be any way anyone could have profited from it. So we don't need to worry."

If you can follow that kind of reasoning, then you belong in intelligence work.

Five

The century began to turn before the ship was put back together, and there was still the work of preparing the voyage and preparing ourselves, physically and mentally.

Janice had evidently thought Mike was making a pass at her, because she began to be conspicuous when he was around, and occasionally she'd call and make a nuisance of herself. If she was a spy, we heard nothing of any further developments—but of course, we wouldn't have.

We had to spend time studying Jupiter, of course, and had actually heard a couple of the mysterious radio signals. They were almost like musical tones, but without any pattern I could discern; if they came from living beings, either they didn't have much to communicate, or they weren't very bright. Still, they didn't have any sensible explanation.

Just in case there might be something there, Michele began studying some of the old books on "exobiology," a science that had died out once it had been fairly well established that there wasn't any biology "exo," at least in our solar system.

"Listen to this!" she would explode (she did all her reading at home after work) and would read me a paragraph about how

any living beings would have to be made of carbon chains and would have to look just like us. “Could anyone have *believed* this?” She told me later that not one thing she read in all this speculation was of any use.

Of course, everything now was different from what the 'sixties and 'seventies, where we spent our childhood, had predicted for the year 2000—and, I'm sorry to say, it was all so drearily different. No bases yet on the moon (though there was still talk about it), no mysterious monoliths, no space cars to hop around from earth to station to planets in, not even any solution to the problem of nuclear weapons. We had a number of gadgets then unheard of, at the beginning of the computer age, when what I now put in my pocket would have filled a whole room; but the vast promise of the beginning of the Age of Aquarius was still that, a promise. Mankind is always on the verge, it seems; and it's economics that seems to keep him there.

Fortunately, the developments in computers, especially parallel processing, made the calculations which would have daunted teams of experts something relatively simple. We were able to develop a trajectory with the possibility of corrections at every step so that we could not only be sure of getting near Jupiter, but could pick the point in the Red Spot we wanted to sink into. When we'd get near there, there would be plenty of room, because, even though it was just an oval-shaped mark on the equator of the planet, it was in reality big enough to hold the whole earth.

Some of the people who knew a bit about the project expressed concern about the length of time it would take to get there and back, and how we could pack all the provisions

necessary; but I pointed out that we'd be accelerating all the way, and so could get there in a week, rather than nearly a year, as it would be if we had to coast. With our negligible mass, the fuel would be more than enough to take us anywhere we wanted to go, with plenty to spare, accelerating all the way up to the point at which Einsteinian closeness to the speed of light made further acceleration impractical.

There was physical training, too—which I would rather not recall. But we were ready by the middle of 2001, which we all thought appropriate, given the old movie, for a trip to Jupiter; and we had decided to see if we could get it in that year.

Then, one day that Fall, Mike came into my office, and said, "Well, I finally made up my mind. I hope you have a nice trip, Paul." And he held out his hand.

"What are you talking about? I'm not going anywhere."

"I mean to Jupiter. I'm staying home."

"What the hell *are* you talking about?"

"I'm staying home."

"Mike, you're coming with us."

"No I'm not. I've made up my mind."

"What's the matter, for God's sake? What's there to make up your mind about? We agreed years ago that all three of us were going."

"Oh no we didn't. You and Michele agreed, not me. You might recall that I was against her coming; but you two just decided that the three of us would all go, and that was it. And then I—"

"Well why didn't you *say* something, Goddammit! You just went along with us, and now you're going to back out when we can't do without you. You can't do that!"

"You can get along without me; I've looked at everything.

I'd go if it meant scrubbing the whole mission; but the third person is just redundant. No matter what we're doing at every stage of the trip, one of us is just a backup in case something happens."

"And we're supposed to do without that because for some reason you've decided you don't want to come along!"

"Listen, if anything happens on a trip like this, redundancy is stupid; it's just redundant curtains."

"What, are you afraid or something? Besides, one of the lunar trips got back even though it was crippled."

"That was nothing like this one."

"You *are* afraid. Mike, there's as much—I'm not afraid—or suppose I am. What difference does it make? I'm not going. You can give whatever reason you want.

"Then what in God's universe *is* the reason? I feel as if I've been hit on the head."

"You know what it is. I don't think that Michele should come with us, living in a space capsule like that with the two of us all that time, and if she does, I don't want any part of it. I was hoping she'd be found unfit for some reason, and the problem would be solved for me, but the latest reports show that that's out. If you could've talked to the doctors, the way any self-respecting brother would have—Why should I? Why should I? Just to satisfy you. I don't believe it, Mike; this is an excuse, it's not the real reason. There's no reason you should deprive her of going just because—You are hopeless! You're blind!"

"Just because she's a woman."

"It's not *just* because she's a woman!"

"Well then, because she rubs you the wrong way. You rub

me the wrong way sometimes, and I never said anything against your going; I never even thought about it. You two have gotten along for three years now on this project in the most trying circumstances; it isn't going to be any worse on the trip itself. Hell, I could put up with Keith Jackson for that length of time!"

"Well, you're not me."

"It's beginning to occur to me to be grateful for that little fact. Look, if we say any more to each other now, we're going to be *really* sorry afterwards. Maybe all you need is a little rest; go off to the beach and take a week's vacation. Frankly, I don't want to see your face for a while. If you still feel the same way when the week's over, maybe I won't want to see your face at all.

"Now go back and finish up whatever you were doing, and I'll call Keith and try to explain all of this."

"I can't take a vacation tomorrow! There's the hell you can't! You were just telling me that you were going to take a vacation from the whole project! Well, if you do, it can't start soon enough for me. Now get out of here, before I try to find out how good a boxer you still are!"

He looked at me as if he wanted to say something, then turned on his heel and left.

"What a glorious development this is!" I was saying aloud as I waited for Keith to answer his phone.

"What is?" came his voice. I explained in not very measured language.

"I see," he said after my monologue. "Well, Paul, I really wouldn't worry too terribly much about it. I think you were right about his needing a vacation; but if I'm not mistaken,

you'll find that when it's over he'll be willing to go with you. I think I'll have a bit of a talk with him during the week, and explain why it's too late to back out. You're a little—um—undiplomatic at times, Paul.”

I thought, Well, if you think that grease will work better than straight talk with someone like Mike, you're a little—um—unintelligent. But I didn't say anything.

Evidently, however, whatever he said was effective; he came back to tell me the day before Mike was due that Mike was “reluctant, but not adamant.”

“And I'm sure,” he added, “if you act normally and leave the rest of the persuading up to me, everything will work out for the best.”

Ultimately, it did work; but it delayed us three months, and made the launch not occur in 2001 after all. The first couple of weeks Mike got back, there wasn't much talking among the three of us; Michele, understandably enough, took his planned defection a good deal more strongly even than I did, and she didn't speak to him at all for a week, hardly even looking at him when he was in the room—which seemed to suit him.

But with all the last-minute details of a voyage of hundreds of millions of kilometers, there are more and more times when you have to say things, and things that not only have to be said but discussed, and it's impossible not to begin to have some kind of personal relationship under these circumstances. I will say this: Mike was clearly making an effort, and though he never admitted it, he implied that the mess was his fault; so in the end, if we were not back to normal, we were on fairly good terms, and occasionally could joke at each other again.

The problem at this stage was to keep the actual launch a

secret; it was no longer simply routine for a rocket to go up into space, though there were still some orbiters—mainly military, and mainly with the old shuttles—going every now and then. We made it look as much like one of them as possible, which was not too difficult, since the bulk of them were secret anyhow, and no one was really interested any more in watching the plume of flame on television when any old rocket went into orbit.

No one had seen the space craft in its perch on top of the rocket for months (we had it disguised with a shield which would come off after we reached space, so we could see); and the elevator that took us up to it was big enough so that we could enter it dressed as an inspection team and suit up inside as it brought us to the cabin.

Communication from earth to ship was by voice on a laser beam aimed at us, which wouldn't be able to be intercepted; but return communications had to be by radio, using a code that would appear like the mechanical data of an unmanned rocket. I was the one who handled this part of it, and I had on the front of my seat (actually, on my lap for the first part of the trip) a variation of the kind of Stenotype machine used in court, on which I had been practicing diligently for a year or so, so that I could type a good deal faster than any of us could talk; this had a built-in computer that took the recorded sounds and checked them with its dictionary and then coded the words in some complicated way that Keith had had done by some branch of the government that did that sort of thing. We decided to do it this way rather than use voice analyzers (though they were in reserve), because they would be more standard than voice, and as everyone knows, even the newest

voice analyzers are apt to mess things up when in an emergency you start getting excited and changing pitch and so on—which is just when you need accuracy. Besides, this way we had a permanent record of everything that went on.

Testing this on the ground, we found it awkward to deal with; but we knew what it would be like when we got really into the journey, and our predictions proved true. Jupiter is so far away, even at its “close” position, that there is a delay of about fifteen minutes for light (and radio, of course) to travel the distance. For comparison, communications with the moon involve a delay of only seconds, and the sun is about seven and a half minutes away by light. This meant that when we got to Jupiter, it would be at least a half hour before our reply to any signal sent us would actually get there. Our method of communication, by laser to us and radio back, allowed us to be talking and listening at the same time; though doing it was a vast exaggeration of the organist’s experience when the console is in one part of the church and the pipes are in another; he has to know what keys he’s hitting and pay no attention to the sound, because it’s a measure or two behind what he’s playing.

But of course that experience was still in the future, as we got into the ship and reclined on the couches, with me (of course) between Mike and Michele. We turned on the mass-reducers, felt the jolt through our bodies and let ourselves get calm again, while Jonathan Meyer’s voice came over our headsets telling us which switches to turn on at what time, and ticking off the seconds.

Ours was the first rocket in the world, and the only one so far, to have liftoff before ignition. The idea was to get above the thick atmosphere before we used the accelerating power of

the engines; and so at T minus Zero, our computer turned on all the mass-reducers of the major components of the rocket and space craft, and we shot up into the air, like a balloon suddenly filled with helium. This, of course, was another reason for having no observers on the ground except those who knew something special was going on.

“You’re doing fine so far,” said Jonathan’s voice in my earphones, “but what a weird sight! It looked like the old Carew Tower in Cincinnati just decided to leap up into the air! Get ready for ignition.”

I was reading back data and impressions all the time, noting that we didn’t feel uncomfortable, because with practically no mass ourselves, there was almost no G-force due to any acceleration.

But then the first stage of the rocket cut in, and we felt a slight bump. We had adjusted the motor so that it burned very slowly (for a rocket), since all we needed was to get a mass of a hundred grams or so to escape velocity, and we would keep gradually accelerating for about half of the voyage, when the speed would be close enough to light to make further acceleration not only impractical but risky, we thought. The slight G-force would save us from the problems of weightlessness and no sense of “down” that the old astronauts experienced.

Like the old rockets, we went into a parking orbit first, so that the computer could figure out what the wind had done to us as we went up and get us positioned for a shot at Jupiter. This was one of the reasons we were glad we didn’t still have the old instrumentation; the computers that belonged to the ship could never have handled data like that.

This phase of the journey took a couple of hours, and while

each of us had plenty to do, we could look out, apparently at rest ourselves, and see the great earth rolling slowly beneath us, full of the glorious swirling clouds and the browns and blues we had seen in our childhood in pictures from orbiters; and as it turned, it went through phases like the moon, now a quarter, now dark (though palely illuminated from the atmosphere), now the whole disk beneath us brilliantly lighted.

“This’ll be our last days and nights for quite a while,” I said.

“It’s nice we’re getting a good dose of it,” said Michele.

Then there was another slight bump, and we were off into space proper.

Six

The acceleration, though it gave us a "down" we could refer to, wasn't enough to give us a sense of movement (if it ever is when it's constant); and we adjusted our masses so that we felt fairly normal (about half our usual mass).

And there we were, hanging in space for a week. At first, the earth receded quickly, though we weren't going anywhere near as fast as later, and we could see it go away from us, looking like a beautiful moon; and then as the moon came from behind it, like a moon with another tiny moon chasing it backwards.

We weren't, of course, going directly away from the earth, in one sense, since the shortest distance between two orbiting planets looks, on a chart, like anything but a straight line. We were subject to the momentum of the earth from both its rotation and its revolution in orbit, and we also had to hit, not where Jupiter was, but where it would be by the time we got there.

In any case, the earth seemed rather beside us for a great while, gradually, however, growing smaller and smaller

(though less and less rapidly), until it began to recede into what looked like a planet when you see it through a telescope, and then all too soon a planet like the ones we could see with our naked eyes from earth.

At this point, all notion of movement was gone. We just hung there, surrounded by a myriad of fixed, brilliant stars, none twinkling, and the one large sun (but not so large as “ours” on earth), all in the absolutely black void. You got the impression that the “sky” was sucking in light; it was a kind of positive force that ate up what was not itself, not just a neutral background for everything. There is something malevolent about space; if it is nothing, it certainly doesn’t feel like nothing when you’re out in it.

There began to be no question but that the cabin was cramped. We could move around, but not much; and we envied the astronauts in the old movies, who had huge ships with race tracks for exercise. We had to do sit-ups and pushups and other exercises that took up no room to speak of.

“Next time,” Mike said at one point, “we’ll be smart enough to get a big plastic bag that we can inflate and stick onto the hatch door. Then at least we’ll have some room to move around in.”

“Sure, and if a meteorite comes along and punctures it,” said Michele, “we’ll find out what it’s like to be sucked into the lovely outdoors.”

“Typical,” said Mike with a grin. “Leave it to you to zero in on what can go wrong.” A look of pain passed for a second over Michele’s face. “Forget it,” he said.

I couldn’t understand it. Keith had been so transparent, it seemed to me, and from the hints he dropped, I gathered that

Mike's choice had been between coming with us or being framed on something that would send him to prison for a good long time. I'd expected him to be morose and sour, and was ready to put up with it because in fact we needed him and his expertise badly. But now that he was aboard, he seemed to be enjoying himself, and didn't give the least sign that he minded Michele's being there—if anything, the contrary. It was the most outstanding example of making the best of a bad thing that I'd ever seen, and I began to wonder whether Chinese inscrutability might be transmitted genetically after all.

Four days into the journey, and ten light-minutes away from earth (the delay-time of communication), Jupiter was already looking like a small moon out the forward port, with the Red Spot near the equator periodically appearing and disappearing around the planet, a vast sea of hydrogen you couldn't get a glimpse of because of the bands of bright and dark clouds that covered its surface. Speculation was that the Red Spot was red because it was a vortex or something that didn't have clouds and you could see the glowing interior of the planet (Jupiter was almost big enough to be a star; and its center certainly was an inferno).

"Look at that," I said. "If you stare at it long enough, you can almost see it moving." Jupiter has a day of only ten hours or so, in spite of its vast size.

"It's going to be fun chasing that thing around the planet if our calculations aren't right," said Mike.

"It seems impossible that we'll be able to fit the ship into it," said Michele; "and to think that the whole United States could fall in and just rattle around."

"That's one of the problems for our ostensible mission," said

Mike. “I hope we hear some of those radio signals, so we can aim for them. If there actually is anything but liquid hydrogen in the Red Spot, we could still miss it even if we cruised around for weeks. Whatever’s in there will have plenty of wide open space to get lost in.”

“You never know,” Michele answered. “Look at the oceans; you can’t budge without finding life. Maybe Jupiter’s like that.”

“In an ocean of hydrogen? What would they breathe?”

“Hydrogen, of course.”

“And then there’ll be all those Jupiterian—or I guess Jovian—porpoises that are really intelligent beings we can communicate with; and they’ll conveniently know English or talk by thought-transference, so there won’t be any language problem. That’s the thing that I never could swallow in science fiction.”

“Well, who knows?” she said.

“I, for one.”

“Oh, well sure. ~~You—~~”
“What was that?” I said. A slight bump, that was all. But a bump out in space?

“Oh, oh,” said Mike. “Start checking things.”

“I’ll get reporting to earth.”

“A lot of good that’ll do. It’ll take twenty minutes to get an answer.”

“You start looking; you know the procedure.” I typed, “Just experienced a jolt. If you can find out what’s wrong, advise us and keep talking without waiting for an answer.”

“Your next project ought to be to change the speed of light,” said Mike, while he and Michele looked over the instruments.

“It’d help.”

“Here’s what it is,” said Michele, “and it’s not good. The hydrogen tank of the first stage has lost pressure, and it’s dropping fast.”

“And we’re changing direction,” said Mike. I was typing everything into the communicator.

“Just the first stage, Mich?” I asked. “What about the tanks in the second stage?”

“They look full.”

“That’s a help. We can use them. Mike, what about the direction? Where are we headed?”

“About fifteen degrees on the plus side of azimuth, and ten altitude; but it’s increasing. Evidently there’s a hole in the side of the tank; we probably hit something. But we’re not spinning to amount to anything; probably we got hit amidships.”

“There’s a vapor trail out the port,” I said. “There goes our hydrogen.”

“Mike, start punching coordinates.” All the time, I was typing data into the communicator, and turning on the storage; the thought occurred to me that we might be moving out of the laser beam, or be tipped enough so our signal wouldn’t reach earth. “We’re probably going to have to do this pretty much ourselves. By the time they hear, we might be far enough off so that an answer won’t be able to reach us. Thank God we’re far enough out so the beam from earth is good and wide.”

“We’re drifting fast, Paul. In five minutes it says we’ll be out of it.”

“Lovely. Well, maybe they can follow the drift of our radio signal and compensate; but I wouldn’t count on it. I tell you what. Take the yaw and pitch thrusters over, and see if you can

turn this thing so that the hydrogen blowing out of that hole will push us back on course.”

“What—Oh, I get it. Okay.”

“And Michi, you see if you can figure out the orientation our antennas should have.”

“I think we can do it,” said Mike, as the universe turned outside the windows.

“I’m having trouble with the antenna,” said Michele.

“Here, switch places,” I said. “If we’re lucky, we’ll be back on course in a couple of minutes, and then we won’t need too much adjustment. I’ll have to watch Mike, though, so keep ducked.”

“It’s working,” Mike said. “Apparently the hole’s very big, because I can get more thrust out of the thrusters than it’s making—and we’ve lost most of the hydrogen out of it already,” he added, looking at the fuel gauge. “It must be a hole as big as the cabin! Man! I’d like to have seen what hit us!”

“When we get back in place, Mike, give us a quick spin.”

“How’ll we pull out of it? We’ll just go spinning on forever.”

“You forget we have practically no mass. When we get back into the proper orientation, I’ll just add a lot of mass here, and it’ll absorb the angular momentum.”

“We better program this, or we’ll overcorrect,” he said, looking at the graphics on the screen. “I’ll take care of it; you see to what the antenna has to do to keep headed toward earth.”

That was fairly tricky, since the computer was too small to take in all the data of the new movements we had been having. I finally hitched one of the backups of the main computer to it

to locate earth, and began to get Jonathan's voice in my ears.

"—were hit by a fairly large object, probably an asteroid. We're getting your instrument readings now along with the voice. I know you know you've been hit, but I'm just letting you know what we're aware of. At any rate, something tore a hole in the first stage and ruptured the hydrogen tank. It doesn't seem to have gone through, or to be in there, though; maybe it just glanced by and ripped off the skin as it went. It's begun to send you off course—yes, I see you've noticed.

"I'd recommend that you just let it blow you off course; it won't last at this rate for more than an hour or less, and we can figure out what's happening and keep you in our sights, if you can keep your antenna pointed at us—"

Nothing.

"I'll bet he's tracking where he thinks we'll be," I said. "Beautiful."

"But our antenna's pointed at him, isn't it?" said Michele. "He can still hear us."

"I hope so. Radio spreads out a lot more than a laser does anyway, so he probably does. Of course, we won't know that for twenty minutes."

"It won't be that long," said Mike. "He'll be getting a steady flow of data from us, except for that minute or two when the antenna was off direction, and so he'll know we corrected things. I hope. Are you sending all of this stuff, Michele?"

"As much as I can. I'm not as good at this as Paul."

"Here, I think we can switch back," I said, and we changed couches again.

A few minutes later Jonathan's voice came back, with no information that was really helpful. By this time, the hydrogen

was gone, and we were for practical purposes where we should have been, “Except,” said Mike, “we’re going sideways now, but it’s in the right direction, so who cares up here? I mean, it’s not worth the effort to try to rotate back and then foul up the antenna again.”

It did put “down” in a rather strange place; but the acceleration was so slight that we all agreed that it didn’t really make any difference; and after a couple of days, we forgot all about it. We had other things to occupy us by then anyway.

I then warned Jonathan that I was going to send a high-speed readout of everything from the time when the bump occurred, in case he missed anything. He, of course, was filling us in on what was happening (ten minutes ago) down there, and about five minutes later, he saw that he had got back into communication with us, and suggested that we send a high-speed readout. It’s interesting to have followed instructions five or ten minutes before they’re given.

Once we had checked out the instruments and verified them with the computers on the ground, we found that we still had a first-stage tank that was almost full of oxygen, and totally intact second and third stages.

“So we’ve got no worries about something to breathe,” said Mike.

“Provided we can get at it if we need it,” Michele remarked.

“Oh, we could,” he answered. “If we really needed it.”

“And as far as fuel is concerned,” I said, looking at the computer screen, “It looks as though we could spend a month more here in space and still have enough to cruise around the Red Spot for a couple of weeks in case there’s anything to see there.”

“And to think the astronauts who used this thing barely got to the moon and back with all three stages!” said Michele.

“I really didn’t have any worries about fuel as soon as I saw that the second stage hadn’t been damaged,” I said.

“All right,” said Mike. “And now let me say what we’ve all been thinking: Now that everything’s under control, we might as well go outside and take a look at what happened.”

He was right. It hadn’t got to the stage of a conscious thought with me, since I’d been so busy, but it was there in the back of my mind. There followed a considerable amount of discussion as to who was to go; and it turned out that at this particular stage of the proceedings, I was the one who’d do least damage if lost in space—which wasn’t the way it was put, exactly, but which is what it amounted to, as I realized with some misgivings when I was putting forward my credentials—and so we all struggled into those body-shaped suitcases they called space suits, depressurized the cabin, and I climbed out. We had taken the precaution of installing electromagnets on our shoes and gloves, so that I stuck to the skin of the ship as if it were a floor.

Still, it didn’t feel like a floor. Jupiter was by this time about three or four times as big as a harvest moon, with all its satellites arrayed around it, over my left shoulder as I clambered onto the ship. And as soon as I stood up, “over my shoulder” became “way down there,” and I had for a while the feeling that I was going to fall all the way down to the planet. I crouched back down in a hurry and stuck my gloves onto the ship, while Michele’s voice came in my earphones, “What’s wrong?”

“Nothing,” I said, shakily. “Nothing really. I’m just

disoriented for the moment,” and I explained what I felt.

“Oh, yes, I read about that,” she answered. “I forgot to warn you. They say you get over it. Don’t look down—or maybe think of it as up or something.”

Mike’s rather scornful laughter made it pass perhaps a bit quicker than it might have, and I began—trailing the rope that tied me to the interior of the cabin—to inch my way back and around out of their sight and the sight of that striped pieplate pasted onto the blackness. Fortunately, this was where I needed to go anyway, and I could use that as an excuse to get somewhere where I would dare to stand up. Once there was nothing but starry blackness surrounding me, the ship became “down” again, and I had no problem walking on its surface.

And there it was: an enormous hole, halfway up the first stage, about the size of the space craft itself, blown into the skin. I walked over to the edge, where the metal was all bent inward.

“Whatever hit us seems to have bounced, or we bounced away from it,” I said. “There’s only one hole, and it’s humongous; but I don’t see anything on the other side, or even any debris except metal inside,” I was leaning over and shining my light around.

“Probably a glancing blow,” said Mike’s voice. “If it hit us square on, it would have gone through and knocked us so far off course we’d never have got back.”

“Looks like it,” I said.

When I returned and we’d got comfortable again, we began discussing what to do.

“There’s no sense carrying the first stage the rest of the way,” I said. “We might as well jettison it right here.”

“It seems a shame to lose all that oxygen,” said Michele. “Who knows if we might need it? And with everything having so little mass, what difference would it make if we kept it on?”

“Just what were you planning to use it for?” said Mike.

“I don’t know. But there’s none around here, you know,” she said a bit wistfully, “and what happens if we get hit again? I just like the security.”

“She has got a point,” I said. “It’s not going to cost any—say!” “Oh, oh!” said Mike. “He’s got that look in his eyes again!”

Michele looked closely at me, staring off into the starry black out the window, and said, “What is it this time?”

“It’s probably crazy,” I said, and I heard Mike mutter, “What idea of his isn’t?” and I added, “but that hole looks big enough so that the hydrogen tank would fit over the nose of the ship down over the hatch. Suppose we stuck it on top of us. We’ve got welding equipment here, and they say that welds are simple in the vacuum out there.”

“But why on earth . . . ?” said Michele.

“I get it!” said Mike. “We could climb out the hatch and have the whole tank to run around in! And we could fill it with oxygen from the oxygen tank! I wonder if we could do it!”

“I’ve got to hand it to you, Paul,” said Michele, “you do think up things that would never occur to any sane mind. How do you think you’d ever stick it on?”

“Oh that,” I said nonchalantly. “You forget that it has practically no mass. If we increase our mass to normal, we should be able to toss it around like a tennis ball.” Theoretically. But I wasn’t going to let her know that I had my doubts.

The three hours of debate on the subject need not be

reported here, nor the annoying exchange with Jonathan on the ground, whose first incredulous reaction came, of course, twenty minutes after we told him our intentions, and a good ten minutes after we had filled him in on most of the details. It became a comedy of errors that I'd rather not recall. Communication in space at enormous distances has a great deal to recommend it, because you don't feel as isolated as Columbus and the early explorers must have felt; but it's no situation to hold a discussion in. Finally, I told him that we were going ahead anyway, so just to stand by and listen for results. This didn't stop his advice coming, of course.

In any case, we separated the stages, increasing their mass temporarily so that neither would go flying off crazily because of the force of the uncoupling, and then reduced the masses back down to where they could be handled. Mike and I then went out, with our mass up to normal to give us leverage. The problem that the early astronauts had in working in space was that they were weightless (as we were too, of course, since for safety now we had shut the engines down and were coasting), and the greater mass of what they were working on meant that when they turned a screw, they had to fight to keep from turning themselves instead of the screw. But we had the advantage of mass on our side, and so—theoretically, as I said—everything should be all right.

There was the first stage, floating behind us, within easy reach. By this time, I was fairly acclimated to being outside, and while Mike got his space legs, I—I won't say ran, but close to it—to the back of the second stage, leaned out and grabbed the first stage, which was as big as a downtown office building, swung it round with one hand, and as it came crashing down

at us, held out my other hand, and stopped it dead.

Michele had her head poked out of the hatch, and was taking pictures and video disks of all of this. I still look at them sometimes and marvel. Mike cowered when he saw the stage about to hit him, but since I had it in my hand, I could feel that it felt almost nonexistent—it was more or less like holding onto a hologram that had decided it wanted to materialize a bit—and I knew that even if it hit us, it wouldn't do any more harm than being hit with a block of Styrofoam. But it sure looked impressive, especially when you knew it was the real thing, not just fancy photography.

Mike and I then just grabbed onto it and shifted it around so that we were on either side of the hole, and carried it to the nose of the ship. It didn't quite fit, which was a blessing in disguise, since we were able to open the hole to the right shape so that we could get it over the nose cone just enough so that the hatch would open inside it, and the windows of the space craft would still be on the outside. Cutting the metal with the welding equipment was no problem; and once we got it fitted on, taking the scraps we had cut off and making a seal wasn't much more difficult. It took us a whole day; but we really had nothing else to do, and it was fun, if exhausting.

"There," said Mike finally, as he had finished cutting a door with a crazy kind of air lock in it in the side of the hydrogen tank. "It looks horrible, but it should be tight. I'll stay out here, and you go inside and start filling it with oxygen. I'll see any leaks, and there shouldn't be any trouble plugging them; the oxygen escaping will help the weld."

This took us another day, and finally we had an enormous room to run around in. The explosion had even flattened most

of the side of the hydrogen tank. so that we had a more or less flat floor. Mike had us running and jumping, even increasing our mass to normal, while he stayed outside to check leaks.

“Okay,” he said when everything checked out. “A good solid jolt will break it apart, but the roads up here don’t have too many chuckholes.”

“Not *too* many,” said Michele, thinking of what gave us the room in the first place.

“Anyway, we’re past the asteroid belt now,” I said. We’ve got at least two days to enjoy this; and who knows? If we’re careful when we land on Jupiter, we might be able to hold onto it altogether.

Michele had managed to get some light into the stage, which wasn’t adequate for seeing all through the vast area, but made it not quite so forbidding as it was originally, with the light from the cabin just streaming up in the middle; and we’d been able to use some padding to make ourselves little beds we could actually lie down on, and used scrap (there were some huge pieces of skin left over) to partition the area near the cabin into rooms where we could be somewhat private.

“Talk about the Swiss Family Robinson!” said Mike.

“More like the little house in outer space,” she said.

Seven

We were now the weirdest-looking rocket ship ever conceived. The relatively tiny second and third stages were stuck into the middle of the first stage at right angles, so that the whole thing formed a T, but with the arms ten times as long as the upright. We turned the rocket so that the upright was now in the direction of motion, pushing that immense log in front of it, and this gave us the whole flattened side as our floor.

The first thing we did, of course, once we had any free time in the hydrogen tank, was to run and jump and yell like crazy things, after being cramped into that tiny cabin for so long. With our minuscule mass, jumping was rather dangerous, and we ricocheted off the sides of the tank rather like pool balls; but without actually hurting ourselves. There's nothing like stretching your legs every now and then on a little jaunt to Jupiter.

"Why didn't you think of this earlier?" said Michele. "We've only got a day or so before we actually get to Jupiter."

"We didn't get hit earlier," I answered.

"That's no excuse. You could have had us bumped by one of

our satellites as we went by.”

“Sure,” I said. “And with my luck, it’d have been one of the ones with a nuclear warhead.”

“We can always postpone the landing, if you enjoy the traveling so much,” said Mike with a twinkle in his eye.

“With you at the controls,” she retorted, “we may do just that; we’ll wind up outside the Red Spot and be bounced around forever in convection currents and storms.”

Mike winced, but he had asked for it. He said, “That could happen anyway, you know.”

“Offhand, it looks a little hard to miss,” I said, remembering what it had looked like an hour ago when we were back in the cabin. It was by now almost all you could see, we were so close to the planet, which was so many times bigger than earth.

But it really wasn’t anywhere near that simple, since the Red Spot zipped around the planet, which rotated once in about ten hours, and we were not yet rotating with it. Everything was all programmed into the ship’s and ground’s computers, of course, including the compensations we thought necessary for the addition of the first stage to our nose; but you never were certain that there wasn’t a derivative or an integral that you left out someplace.

But that sort of thing was not to be dwelt on. “I know one thing,” said Michele. “I’m taking my break up here and having my first good nap in a week.”

“Occasionally you do get something like a bright idea,” said Mike.

“Oh, yes; women are very good when it comes to domestic matters,” she said, which brought us into forbidden territory, and I said quickly, “You don’t think we’ll have to jettison this

when we land, do you, Mike? It'd be nice to have all this room to move around in on the way back."

Mike seemed not to have noticed Michele's remark, because he said, "Not to mention all the specimens of Jovian life Michele is going to want to bring back. Sure, we can try keeping it on. It all depends on how turbulent it is down there, and how gently we can sink into the ocean."

"Too bad we can't have a window up here," said Michele.

"Well," Mike said, "you find me the glass and I'll give you a pane."

"You do anyway," she said, "but it's where I can't see out of."

"Okay," I said. "Mike, let's leave Michi up here for her nap and get below to see if this thing is entering orbit right."

By the time we were seated for five minutes, Jonathan's voice came from earth giving us instructions, and we were busy for an hour or more, getting the ship into orbit over Jupiter.

"Looks okay to me," said Mike finally. "Now all we have to do is wait for confirmation from Jonathan. If we missed, this half-hour gap in the telephone line is going to be a nuisance."

"It'll be more than a nuisance this time," I answered, looking up from my console. "I just figured out that in forty-five minutes we'll be on the far side of Jupiter, and won't be able to hear anything from earth for another five hours."

"That's right," he said. "From now on it's five hours talk and five hours on our own. Oh, well; it could have been worse. If they didn't reactivate that tracking station in Australia, there would have been twelve hours when earth would have been in the wrong position to send anything; and it would have taken half of the storage of the computer here just to figure out when

we'd be able to communicate and when we'd have to twiddle our thumbs."

"Aren't we supposed to be in a synchronous orbit?" I said.

"Almost. Why?"

"Well, don't look now, but the Red Spot isn't below us."

"Oh that. No problem. It catches up with us tomorrow morning, and we make the final burn just as we're over the leading edge."

I was working to free up the high-gain antenna we had, directing it at the storms below us. I turned it on, and a burst of static assaulted my ears. "Wow!" I said. "If those radio signals they heard from the Red Spot were people talking, there's a convention down below us!" It was just the storms, of course. "Anyway, the radio works."

"Good. We'll need it."

Shortly afterward, Jonathan's voice came over the laser communication telling us that we were right where we should be, and that we could relax during the period of blackout, because nothing would be happening.

It was about time for Michele to come off her break, and then Mike went up and got a whole eight hours, while I stayed with Michele down in the cabin catching up on data. Finally, she said, "I can keep things going; you go up and get in some sleep; we may need everybody alert six hours from now."

When the two of us got up, we could see the Red Spot on the horizon, advancing slowly upon us. "There she comes," said Mike, "just like it says in the instruction manual."

"Well, I hope its really the eye of a storm and is calm inside there, and isn't actually a whirlpool," said Michele.

"That'd be nice, wouldn't it?" said Mike. "We'd be sucked

down to the center of the planet and be incinerated.” Jupiter was so massive that it was just this side of being a star, with the center so hot that nothing could exist there; almost enough for hydrogen fusion.

“Well, we’ll find out soon enough,” I remarked. “another couple of hours, and in we go, whirlpool or not.”

“What I can’t understand,” said Michele, “is why the thing’s so constant. There’s lots of other spots that appear and disappear, but this one’s always there. And it’s by far the biggest. You’d think it’d be the most unstable.”

“That’s really what we’re here to find out,” said Mike. “All this business of radio signals was something to keep Keith and his people happy. They have radio signals on the brain; they think if there’s radio transmission, somebody’s leaking intelligence documents.”

At this point Jonathan broke in, giving us instructions on what we were to do. He had succeeded in getting a fix on our position within a few kilometers, and so he knew exactly how many seconds he had to anticipate what he said so we’d receive it at the right time. It was a great help; it kept us from having the added trouble of juggling with our clocks, especially since there was some relativistic slowing down of our time with respect to his because we’d been accelerating all this while.

We first flipped the ship over so that the tail of the second stage was facing the planet, and then, as the Red Spot came below us, we gave a brief burn to get us out of orbit, and began to float gently down, Mike with his eyes now glued to the mass-reducer console to keep our descent slow, Michele just as intent on the rocket console in case emergency power was needed, and I keeping up a steady flow of information to

Jonathan, to back up what the instruments were saying directly to him—and trying to keep an eye on everything else at the same time.

“We’ll get into it with no problem,” said Mike. “Paul, have you got the high-gain antenna on in case there’s one of those signals?”

“It’s on, but there’s nothing coming over.”

“We’re beginning to enter the atmosphere,” said Michele, as the sky outside the window turned from black to a slight murkiness.

“Seems calm,” said Mike, “but it’s probably too early to tell.”

“The sky’s not blue here,” I said, glancing out. “It’s kind of a grayish orange.”

“It figures,” said Mike, still concentrating on his console. “There’s not enough light from the sun to make any difference to speak of; all the light comes from the center of the planet. Besides, methane and ammonia have a different scattering coefficient from oxygen and nitrogen.”

“Lovely air for breathing,” said Michele. “Almost as nice as Los Angeles.”

There was a faint “Beep!” from the high-gain antenna. “There’s one of them,” I said. “I think,” I added. “It only lasted for a fraction of a second.”

“A tone somewhere around a high A?” asked Mike.

“I guess so. I didn’t have my pitch-pipe out.”

“That’d be it. Any way of telling where it came from?”

“I suppose it was dead ahead. The antenna was pointed in that direction, but it didn’t last long enough for me to get a fix on it.”

“Give us—let’s see—” he punched in figures “say a half second from Number Three, Michele. That’ll keep us from drifting. Thank God there’s no wind.”

“Will it happen again?” I asked.

“No telling, but probably not. These signals were only sporadic. We’re lucky we heard one at all.”

“Here comes the ground,” said Michele.

“Get ready, everyone,” I said.

Mike gave us a little less mass, and we slowed down almost to no speed at all. There was no real surface; the atmosphere just gradually thickened into the hydrogen sea, and we were under before we fully realized it.

“The eagle has landed,” said Mike. “I guess,” he added.

“Are we completely under?” I asked.

“That depends on where ‘over’ is.”

“Well, let’s go down a little farther.”

“The problem from here on is going to be how to keep from going down,” said Mike. “Don’t bother me for a few minutes; I have some fine tuning to do.”

We sank and sank, slowly and ever more slowly; and the view out the window got clearer and clearer, until if you looked up you could see the beginning of the atmosphere as a kind of grey surface. It was almost as if we were upside down, and the atmosphere was the solid part of the planet, and we were in the real air. Everything had a kind of warmish glow to it, like a brilliant day at sunset, just before the sun actually sinks beneath the horizon; but the sun in this case was underneath us. The temperature surrounding us was not too great, and there didn’t seem to be the slightest disturbance of the ocean we were in, except for the turbulence caused by our entrance into it.

Finally, we stopped, floating about half a kilometer under the surface.

“That should do for now,” said Mike, letting go some of the strain he had been under. “Now. What’s out there?”

Nothing.

Nothing at all. Everywhere you looked, the sea went on and on, until it disappeared into a generalized orange glow, a little more pronounced as we looked downward (we couldn’t see straight down), and the merging into grayishness as we looked upward. But to the sides, nothing at all.

I don’t know what we had been expecting; but it is one thing to be told that there probably aren’t any features in the hydrogen sea, and another thing to experience it for yourself. There wasn’t even a proper horizon, let alone trees or plants, or rocks; there was just nothing at all. It was even more desolate—far more desolate—than space, because space was full of stars, far more brilliant than we had seen them on earth; but still the familiar Orion and the friendly Pleiades. The distance we had traveled had not disrupted the way the constellations appeared; we only missed the moon and saw the sun as small.

But all there was here was light, undifferentiated light; but the light was darker than the black of outer space, because the only thing it lighted was our ship.

I know what my hell will be like; I’ve seen it. I am going, God forbid, to be all alone in the middle of the Red Spot on Jupiter, bathed in a glow that would caress any object, if only there were an object to caress. Being alone in the desert is nothing to the emptiness of this experience, because in the desert, there is sand and sky and sun and stars at night. But here, there was not even any day or night; all the light came

from the hot center of the planet, and it was a steady, constant effulgence that hadn't changed for billions of years; and there was no shore and not even a bottom to this ocean; it just went down and down into what you knew was white-hot destruction—and even then it just kept going, and went up through the same thing. And when you reached the surface, there really wasn't even a surface; just the hint of a line and a lessening of the light.

“Well,” said Mike at last.

And his comment bounced around the space craft, echoing, looking for a way out, feeling its way through the window, and vanishing into the void outside.

And then came Jonathan's voice, faintly through the layers of atmosphere, choked by the nothingness that engulfed us, “I presume you've made it; you'll let us know, won't you, and not get so interested in what you see that you leave us on pins and needles.”

Interested in what we see! It was lucky that our communication was by keyboard, because I couldn't have brought myself to say anything, once I heard Mike's voice reverberating in the despair that surrounded us.

“We've got to snap out of this, you know,” Michele said with an obvious effort. “We have to find out if the whole Red Spot is like this, or whether we just happened to land in an empty place.”

“Frankly, I don't care,” said Mike, and I added, “I don't think I can take much more than an hour or two of this.”

“Well, we really should cruise around a little. I admit it looks pretty hopeless.”

“It looks like the definition of hopelessness,” I said.

“Look, there are some bubbles we made,” said Mike. “At least it’s something to see.”

“Bubbles?” said Michele. “Where?”

“Out there,” said Mike.

“I see them.” And suddenly I sat up. “Moving *down*?”

Eight

But apparently it was just an illusion; they now seemed to be rising to the surface, only very slowly. I typed to Jonathan, “The only thing visible here is a mass of bubbles, undoubtedly released from the ship. But since there is absolutely nothing else to describe, here is what they look like. The mass is about a meter in diameter, I would guess; though, since there is no reference point to establish distance here, it is hard to be accurate. If this is its size, I would judge the individual bubbles in it to range from about three centimeters in diameter to a half-centimeter or so.

“From where we are, they look silvery rather than transparent, probably because of the viscosity of the liquid they are in. Another indication of extreme viscosity is that they are rising to the surface at not much more than a couple of centimeters per second—and even appeared almost to be going downward once—and also that we have not seen even one bubble break away from the mass.

“The mass itself is amorphous, and very slowly changing its shape, probably in response to subtle currents that cannot be detected as motion in the ship at all.

“We still have our first stage attached to us, by the way, and it looks as if we’ll be able to bring it back with us. It is a shame we won’t be able to bring anything back in it, but there is absolutely nothing to bring, so far anyway.”

“Why does it seem like it’s looking at us?” asked Michele.

“It must be all those little bubbles that are in the shade of the other ones,” I answered. “They look black, like pupils of an eye.”

Michele laughed. “Can you imagine if they were eyes? They just appear and disappear all over it. If you wanted to see in some direction, all you’d have to do is put an eye over there and look.”

“I think I’ll leave that out of the report,” I said.

“It is a funny thing, though,” she said. “The black bubbles seem to be only on this side.”

“Probably because this is the only side we can see clearly,” I answered.

“I never thought I’d see the day,” said Mike “when we’d all be intrigued over a mass of bubbles.”

“Yeah,” I answered. “But of course they can tell us a lot about the nature of the liquid out there. Judging by what they’re doing, there’d be no trouble in us going out there in it.”

“If there were anything to go out for.”

“Don’t lose hope,” said Michele. “We may find something yet. There they go,” she added as the bubbles began rising out of sight, as if whatever was holding them down close to the ship had lost its force. She was closest to the window where they had been, and leaned over to get a last glimpse as they curved out around the overhanging first stage.

“You know something funny?” she said. “There are some black bubbles on the bottom.”

“So what?” said Mike.

“The light’s coming from the bottom.”

“Maybe it’s reflections from the ship or something,” I said.

She looked a little disappointed. “You have an answer for everything.”

“What else could it be?”

“Don’t you get it, Paul?” said Mike. “She thinks that John visited Jupiter before he wrote the Book of Revelation, and this is one of those “living beings full of eyes round and within them.”

“We’re too far away from home to get blasphemous,” she retorted.

“We’re also too far away from home to go nuts,” he said.

“I like that! If I’m the one that’s nuts, who got us here in the first place?”

“Don’t look at me; it was your loving brother’s brainstorm. It runs in the family.”

“Well, you came along with us, which doesn’t speak too well for your own sanity.”

“You forget that I didn’t want to come.”

There was an embarrassed pause.

After a few minutes, Mike said, “Well, here we are, back to zero.” We stared out at the blank again for a few minutes. “At least the bubbles were a diversion,” he remarked, as once again the emptiness pulled our minds into it. You could almost feel your soul being breathed out with every exhalation.

“Okay, now what do we do?” he said. At least, he wasn’t afraid to talk.

“Isn’t it time to eat?” I asked. “We’ll be in better shape to decide something if we have food in our stomachs.”

How little I knew what I was saying! Another unlovely aspect of this friendly planet was discovered as soon as we tried to pick the food out of the containers.

“What is it this time?” Mike was asking. “Chicken sandwich. Oh, joy. Hey! It weighs a ton! I can barely lift it!”

“Of course!” I exclaimed. “We’ve got mass-reducers on the envelope, but we can’t reduce the mass of the food. Will we be able to eat it?”

“Well, we’ll have to try,” said Mike.

“No, wait!” said Michele. “It could kill us, you know. We don’t have to eat now; we can wait a while to see if there’s anything to see here, and leave before we eat.”

“That would be giving up,” said Mike, “and I for one don’t give up this soon. I want to find out why everything’s so calm here, if the planet’s just one big storm outside this place. You’re the biologist. How likely is it that we’ll die if we eat this? It’s only chicken, after all.”

“I have no idea. It just might rupture something as it goes down.”

“Well, there’s one way to find out,” said Mike suddenly, popping a minuscule fragment into his mouth before I could stop him. Michele gave a little shriek and looked at him with horror.

“Tastes like chicken,” he said, “but it’s a little hard on the tongue and the lower jaw.” He swallowed and his eyes popped. “Whoo-ee!” he said.

“Are you all right?” cried Michele, frantic with worry.

He was reclining on his seat, and looked over and saw the

expression on her face. He grinned feebly. "If I said I tore my stomach open, would it make any difference?"

"Mike, don't make jokes! Are you okay?"

"Don't get excited; everything's fine," he said, a look of disappointment coming over his face. "It just feels a little uncomfortable, that's all."

"What a damn-fool thing to do!" I exclaimed, now that I could breathe again. "we would've had to bury you here!"

He went into half-hysterical laughter. "I can see the obituary now: 'Michael Wang, beloved son of Paul and Teresita Wang, on Jupiter as the result of eating a piece of chicken sandwich.'"

"It's not funny."

"What's the problem?" he said, calming down. "I proved that we can eat, didn't I?"

"And put your life in danger for no useful purpose."

"What do you mean, 'no useful purpose'? If we stay here, we've got to eat."

"we don't have to stay here."

"Nuts. We can stay now if we want to. Go ahead and eat; it won't hurt you."

I looked at him, and picked up a piece of sandwich, which looked soft, but weighed just an enormous amount, and said, "Well, don't do anything more like that."

"Paul," he answered, "let's get something straight. You're more or less in charge here, but you're not our captain, and I'm not in the navy, and we're all adults. I do what I do. As long as it does no harm to anybody else, what I do is my responsibility. Even if I decide to kill myself, that's my business."

"Oh yes?" said Michele. "You talk as if what you do to

yourself has no effect on us. Suppose you hadn't killed yourself just then, but just got an internal hemorrhage, and we had to doctor you all the way back."

"You could've let me die. It was my choice."

"Oh, sure!" she said. "Don't tempt me!"

"Okay, okay," he said. "I'm not planning to commit suicide—at the moment anyway. And I promise that if I do anything, I'll take all the effects into account. I just wanted to let Paul know that he's not my master. I'll listen to reason, but not to orders."

"Let's eat, shall we?" I didn't like the undercurrent that I heard in what Mike was saying, though I couldn't for the life of me fathom why he harbored what was evidently a death-wish. But at the moment I was more preoccupied with resentment at his accusing me of giving him orders, when most of the time all I was doing was playing the diplomat and soothing the troubled waters that he and Michele kept stirring up.

Eating was anything but amusing, except perhaps to an outside observer, if there had been anything outside that could have observed. Drinking the water that had turned to liquid lead was the worst; and then there was the feeling of extreme torpor afterward for about an hour, as the food stayed there with all its mass before it got digested and entered into our systems. We ate silently, partly because of Mike's remarks, but even more because it was just so much work.

After the food entered my stomach, I could sympathize with Mike's evident depression. Absolutely nothing mattered except digestion; the slightest outside impression was a distraction, to be avoided at all costs. For a while, even death looked like a relief, even though there was no pain, but only the heaviness

inside me—and I knew the others felt the same way. When it was all over, we just lay on our seats and stared at the ceiling for almost an hour.

I should stress here that this first meal on Jupiter was far and away the worst, because our systems were totally unprepared for it. Gradually, as we became accustomed to living there, we found that our bodies immediately attacked any food that was put into them; and while we still had to be careful, and eat very small bites at a time, and learn to sip drinks, the period of lassitude after eating shortened considerably. It was, however, uncomfortable enough so that it would take a great deal of motivation to keep us on Jupiter any appreciable length of time.

And the motivation came as we were still recovering from that lunch.

Michele happened to glance over at the window beyond Mike's seat, and say, "I think there's another set of bubbles."

"Oh," said Mike, and turned his head. "Yeah, you're right." Then it was his turn to sit up. "They *are* moving down! Look!"

"What?" I said, sitting up myself. As I did so, I thought I could see several new dark spheres appear in the mass.

"By God, did you see that?" said Mike. "Did you see the black bubbles pop out? No current made that happen!"

"It must have seen us sit up," said Michele, who was also upright now, staring out the window. "They *are* eyes!"

The thing was moving closer to the window, still slowly, keeping a few dozen eyes fixed on us—if they were eyes, as they must have been.

I don't know how the others felt, but I was terrified into

immobility at the sight. I suppose I could have handled seeing little green men zipping around in saucers, with peculiar antennae sticking up out of their heads; but this giant amoeba surpassed anything the *Star Trek* shows had ever given me sleepless nights over.

It kept advancing on the window, looking with those naked eyeballs; you can't imagine the impression it made. It was repulsive, disgusting, horrifying—~~Are~~—you people still alive up there?" came Jonathan's voice, like a pistol shot, making us all jump—and the creature, evidently noticing the movement, stopped and formed itself into a kind of pyramid, still with most of its eyes trained on us. It was definitely something alive.

Jonathan's voice was going on, ". . . we've been discussing how you should go about eating. Judging by the readings we've been getting, the food shouldn't do you any damage, but you'll discover that it still has all its mass, and . . ." and so on, for another ten minutes.

The thing outside the window had recovered from its fit of triangularity, and was approaching again. I pulled the communicator over, and began radioing back, "We've eaten. You won't believe this, but those bubbles are alive, and are full of eyes round and within them. We are not crazy, but let us alone. We don't want to scare it off." Always supposing that it didn't scare us off first.

"Look!" said Michele. The thing had gone into something like a backward somersault, and rolled itself into a spiral; then came into a more or less oval shape, and looked at us once more out of what would have been its stomach if it were Humpty Dumpty.

All of a sudden "BEEP!" went the receiver attached to the

high-gain antenna, and the creature made itself into a pyramid again, and then somersaulted into its spiral.

“I bet it heard you, Paul.” said Michele.

“Heard my radio signal?”

“Sure. That noise evidently came from it; and if it can make radio noises, it can probably sense them. It can see, or it wouldn’t have reacted to us moving; and radio waves are just low-frequency light—and it reacted as soon as we started transmitting.

“I thought you might have hurt it when it went into its spiral there, but it just did another one, and gave the beep in reply.”

“Well, there’s a simple way to test that,” said Mike. “Switch the little radio to ‘send’ and give it a beep back.”

I felt like an idiot, but I turned on the radio, and said, “BEEP!” as nearly as I could imitate the sound that came over the speaker.

The thing made another spiral, and then suddenly flashed into a bewildering variety of shapes before it, beginning and ending with the pyramid we had seen at first; but in between it was like a kaleidoscope twirled by a little boy who wanted to see how fast he could make the patterns change.

Then the creature became an egg again, evidently waiting.

“Now what was that all about?” said Mike.

“He asked us a question, I’ll bet,” said Michele. “That must be the way they talk.”

“Talk!” scoffed Mike.

“What else?”

“Then what that means is that they don’t normally communicate by those radio signals, even though they can make them and sense them,” I said. “They communicate by changing

shapes.”

“Isn’t *that* just ducky!” said Michele. “How on earth are we ever going to communicate with them?”

“Which is the point, of course,” said Mike. “We’re not on earth.”

“Well, if the mountain won’t come to Muhammad,” I said, “let’s see if we can teach them to talk our way.”

“Provided they can say something besides ‘Beep!’” said Mike.

“Well, we can find that out, I suppose, if this guy’s smart enough. He expects an answer to his question, if it was one. Let’s see . . .” I pulled the mike over and said, “Hello, there.”

A pyramid. More shapes. A cigar. Then “Oh . . . eyrrr” came over the speaker.

“There it is! He was trying to imitate you! They’re not only alive, they’re intelligent! Think of it!”

“And he’s not only intelligent, he’s pretty sharp,” I said. He’s figured out that *we’re* intelligent, and that we talk this funny way.”

At this point, the creature made a set of patterns, beginning with a rather prolonged pyramid, and at a pause, we heard “ehoh,eyre, ello,eyrrr” and then the pyramid came again.

“I’ll bet he’s asking whether we talk this way,” said Michele. “I’ll bet that pyramid thing is a question mark.”

“What should I say?”

“HHhhh. Hh. Hello. Hello,eyre. DDddh. Dh. Helldh. Helldththth. Thth. Hello, there. Hello, there,” said the speaker. The creature made the pyramid.

“Man, will you listen to that!” said Mike. “And he only heard it once! Tell him ‘yes,’ Paul. I think Michele’s right about the question mark.”

“Yes,” I said into the microphone.

“Eh,” said the thing. “Iiiii. yeh. Sss. Sseh. Yes. Hello, there. Yes.”

“I got an idea,” said Mike, and he stood up and went close to the window. The Jovian looked at him for a few seconds, and then flowed into a reproduction of Mike from the waist up, which was all he could see. He even had a face of sorts, with two of his eyes where Mike’s were, and a little row of eyes where Mike’s mouth was.

“What’re those eyes going down the front?” asked Mike, and then said, “Oh, I see. My buttons. You know, friend, for the first time I begin to think you’re good-looking. Well now, if you can catch on, you’ll see we can’t do any shape-changing to speak of.”

Mike moved his arms, and the creature moved its Mike-arms. Mike showed his hands, and the thing’s arms suddenly had hands on it. But then Mike began pulling at his face and his body, and the Jovian at first tried to imitate him, but pulled himself all out of shape, and then went into a pyramid again.

“Tell him ‘no’ while I’m doing this,” said Mike.

“I get you,” I said, and told the Jovian “No.”

The Jovian turned into his egg shape. Suddenly, he became a star, and then made a beautiful set of shapes, and said, “NNNnn. No.” and then turned into his reproduction of Mike and said, “Hello, there. Yes.”

Mike took the microphone away from me and said, “Yes.”

The creature became a star again for an instant, and then said “Yes,” in a perfect imitation of Mike’s voice.

“He sure can imitate,” said Mike.

“I think he’s caught on to what “yes” and “no” mean, too,” said Michele. That set of shapes probably meant, ‘This is the

way we talk, but you—no’ and the “Hello there, yes” means ‘that’s the way you talk.’”

“Now where do we go from here?” I asked.

“Let’s see,” she said. “I know. Let’s each go up to the window and say our names; and then when we’ve done this once, we can go back again and say the other two names with ‘no’ after them, and our own name with ‘yes.’ That way, he’ll probably see that we’re referring to ourselves, and it’ll confirm ‘no’ and ‘yes.’ Let’s try it, anyway. You first, Mike.”

Mike went up to the window and very distinctly said his name. The creature repeated it after practicing the consonants a couple of times, but remained an oval. Then Michele went to the window, and said “Michele,” and the creature made a representation of her, and she said “Yes,” and he said “Miss-shello, Mishell, Michele, Yes.” And then I went over, and said Paul, which first came out “Kaul,” as he made himself look like me—though it would be hard to distinguish his rendition of Mike from me. I said, “Michael, no. Michele, no. Paul, yes”

“Yes, Paul,” he said. “Michael, no.”

Mike took my place. The creature said, “Michael, yes. Paul, no. Michele, no.”

“Good!” said Mike

The creature made a pyramid.

“How do I explain?” He said into the microphone, “Yes yes yes. Good.”

He then made a sphere, a cube, a star, and a kind of feather in rapid succession, and said, “Yes. Michael, no. Michele, no. Paul, no,” and he made the shapes again, and said, “Yes.”

“That’s his name!” said Michele.

“Brother!” said Mike. “How’re we going to handle this

one?”

“Here, let me,” said Michele, and went to the window, and pointed to herself and each of us in turn. “Michele, Michael, Paul,” and then, pointing outside to the creature, she said, “Saint Peter!”

The Jovian fell over backwards into a spiral again, and then began practicing the sounds he hadn’t heard yet in his name. “Saint Peter,” he finally said in Michele’s voice, and went into his spiral again.

“I know what that is!” said Michele. “He’s laughing!”

“Why St. Peter?” said Mike.

“I don’t know. It just popped into my head—probably associated with Paul, I suppose—and I guess because he’s the one who met us at the heavenly gates.”

“If this is heaven, give me hell.”

“There are times when I’d like to.”

“All right, you two,” I said.

St. Peter seemed to have recovered from his laughing fit, because he became a kind of generic human torso, with an arm that pointed, and said, “Paul, yes. Michele, yes. Michael, yes. St. Peter, yes. Good!”

We were wondering what step to take next, when St. Peter took matters into his own hands, and dashed at us, crashing gently against the window with a rattle of clicks.

“Good heavens!” said Michele. “I hope he didn’t hurt himself!”

He had backed off and made his question mark. I went up to the window, and made as if to push my hand through, knocking on it. “No,” I said. “Solid.”

“He’ll think that’s its name,” said Michele. She knocked on

several other things St. Peter could see, while he made his egg of concentration, and said "Solid" to each one, and then went to the window and said, "Glass. Solid."

By this time, St. Peter had a fair command of pronunciation, and so it was no time before he said, "Glass, solid, yes."

"We've got almost a sentence!" said Michele. "This is fascinating! Let's see." She held her left hand up, with the fingers spread apart, and then held her right hand, fingers down, above the left one and moved the hand by the left hand, having the fingers pass through the fingers of the left hand. "Pass," she said, and did it again. "Pass, yes." Then she closed her left hand and bumped the fingers into it. "Pass, no."

"Glass, solid; pass, no" said St. Peter.

"Good!" said Michele. "Good!" said St. Peter.

"Boy, he's bright," I said, and Mike interjected, "Did you hear those clicks when he hit the window? He's pretty solid himself. What do you suppose he could be made of?"

That hadn't occurred to me, I was so busy with the language problem. I thought for a few seconds, and said, "Got me. There's nothing around but hydrogen, as far as we can tell."

But while we were discussing this, St. Peter was not idle. He had come to the window, and he and Michele were scrutinizing each other, Michele pointing to various parts of her body, and saying their names, with him repeating them with increasing accuracy of intonation and diction, while making enlarged imitations of strands of hair, hands, and so on. When Michele pointed to her eye, however, he produced a number of dark spheres and said, "Eye" and made the pyramid.

"Yes," said Michele.

"Good," he answered, and began showing what he could do

with his eyes, while Michele tried to indicate that ours were fixed in one place—which he did not seem to find surprising. But then he came close to the window, said, “Michele, Paul, Michael,” and swam back a way. He repeated this, and then said, “Pass, St. Peter, no. Michele, Paul, Michael, yes pass.”

“He wants us to come out,” said Michele.

“What do we tell him?” I said. “It’s clearly too dangerous to go out just yet.”

“What’s the problem?” said Michele. “He’s obviously friendly.” “Yeah, but until we can get some real communication going, he might accidentally hurt us somehow. No, I think we’d better wait a while—if ever. What do you say, Mike.”

“I suppose after a while, we might go out and meet him—and any friends he has. I suppose he’s not alone. But I agree, not now. We’ll have to see how things develop.”

“How do we say that?” said Michele, who still had the microphone. “Well, what the heck. Pass no now; Later pass yes.”

“Michele pass.”

“Michele pass no now.”

“Michele pass yes.”

“Now no.”

“Now” Pyramid.

“Later, yes. No now.”

Egg. Then he said, “No St. Peter now. Later St. Peter, yes. No pass Paul, Michael Michele. Later St. Peter,” and suddenly, he was off like an arrow, or better like a drop of water falling sideways, in a few seconds becoming a speck off in the orange distance, and finally disappearing altogether.

“Look at him go,” said Mike. “I wonder what he meant.”

“Simple,” said Michele. “He said, ‘You people wait here; I’ll be right back.’”

“That does sound like it. He certainly knows how to make the most of a limited vocabulary.”

“I imagine that it’s Take Me To Your Leader time; only it looks like he’s going to bring the leader to us,” said Mike.

“Probably. He’ll probably come back with a bunch of—it sounds funny to be calling things like that people,” I said.

“Why not?” said Michele. “If they’re at all like him, they’re very nice people, too.”

“At least at first—well, maybe second—glance,” said Mike. “By the way, Paul, the atmosphere above here is ammonia and methane, right?”

“Yeah. So what?”

“Well, that gives us carbon, and down here we have lots of hydrogen—but no oxygen. My guess is that he’s made of some kind of hydrocarbon. Now put that together with the sound you heard against the window, and what does it make you think of?”

I thought for a minute, and then said, “You mean to tell me you think the people on Jupiter are made of plastic?”

Nine

"I'd have called him Adam, not St. Peter," said Mike to Michele as we were waiting, "if you were going to get Biblical. He obviously doesn't have any clothes on, and couldn't care less. 'And they were naked, to wit, and were not ashamed.'"

"Well, he's St. Peter now, anyway," she answered. "He knows his name, and it'd only confuse things if we changed it."

"Don't get me wrong; it's as good a name as any."

"You know," I remarked, "it's a good thing we landed so close to him. With that silvery-gray color he is, he'd have been impossible to see if he'd been any farther off."

"Of course, it wasn't entirely an accident," said Mike. "We headed for the beep we heard, remember."

"I wonder why he made it if he wasn't talking," I said.

"You know what really gets me, though" said Michele, "is how smart he is. He caught on right away to the fact that our signals were a language that was completely different from his, and then in a couple of minutes, he was already using the words we taught him to tell us to wait for him."

"Well I wish he'd hurry up," said Mike.

“Not to mention his skill with his radio transmitter,” I said. “Did you notice how he not only got the sounds, but imitated the intonation of our voices? When he was answering you, I’d have sworn it was you talking yourself.”

“That’ll be a problem when we get outside and can’t see our faces inside the helmets,” she said. “I hope he’s typical. If all the rest of them learn this fast, we may be able to find out a lot in the short time we have here.”

“I wonder how they tell each other apart?” said Mike. “You can’t go by shape, obviously, because they don’t have any. Maybe they come in different sizes.”

We speculated pleasantly along these lines for a while. It was interesting that the blankness of Jupiter was nowhere near as depressing now that we knew that there was at least one living thing on—or rather in—it. We were all, as we talked, straining our eyes into the clear nothingness to see if we could spot St. Peter and his delegation returning, or maybe see something else.

Jonathan’s voice broke in after a while. “Are you there? What about those bubbles? Are they anything?”

I began typing a full report, beginning with an assertion that we were all sane and hadn’t been bewitched by the surroundings. In the middle, he returned, “We’re getting it. Find out as much as you can about them as soon as that one comes back. If you need to adjust the time of your stay there, let us know, and we’ll figure out how long it can be, and just when you’ll have to leave, and all that And by the way, I think I have something that’ll improve communications. Will you take a little time off from reporting, Paul, and listen to a series of numbers I’ll give you? Copy them down and see what you

make of them, and then send them back; we've got something funny down here, and I just want to check what happens to numbers. The others don't have to bother with this part; you can go on about whatever it is you're doing."

That was a little strange, but maybe some of the monitoring devices on earth were off a little. "Are you ready?" he said, and then spoke these numbers, very distinctly: "10, 1, 3, 11, 19, 15, 14, space, 19, 1, 25, 19, space, 13, 9, 11, 5, space, 11, 14, 5, 23, space, 10, 1, 14, 9, 3, 5, space, 20, 23, 15, space, 24, 5, 1, 18, 19, space, 1, 7, 15, stop. Now, can you type these back to me?"

"What's going on?" said Mike.

"Search me," I said. "I presume they know what they're doing." I typed the numbers back carefully. It was odd how they spaced themselves on the page in front of me; they didn't look like the kind of numbers any instrument would be sending back to earth. Mike and Michele were busy with housekeeping details, and Jonathan went on with instructions and questions to us. Finally, after he must have received that part of my report he said, "I got the numbers back. They're A-1. I'll sign off now. If you have anything to report when the bubbles get back, we'll be listening."

"They're A-1?" I thought. "Not okay, or even A-okay? There's something fishy going on. A message? Then it's just to me A-1. Probably he's saying A is 1; let's see what happens."

"What're you doing, Paul?" said Mike.

Thinking fast, I said, "Trying to figure out what instrument down there is getting faulty readings." I had a pad on my lap, with the alphabet, and was putting numbers on top of letters;

but Mike was too busy looking out the window to see it. Not to take a chance in case Mike glanced over, I slipped the key—if it was a key—under the communicator on my lap in such a position that only I could see what was on it, and then began mentally substituting letters for the numbers. The first four letters were JACK, and I knew it was a message, probably dealing with Keith Jackson—who would want this cloak-and-dagger stuff.

It read, “JACKSON SAYS MIKE KNEW JANICE TWO YEARS AGO.”

Lovely. In one sense, so what? There was no law against hiring someone you knew, if he even knew she was being hired; and if she knew he was working there and was looking for a job, why wouldn't she have signed up, whether he knew of it or not?

But then why wouldn't he have mentioned it? Or did he? I seemed to recall some remark of his—but I couldn't place it. Anyway, the message didn't say how well he knew her, and I'd have been hard-pressed to recall every person I'd met two years ago. And of course if he did know her more than just having met her, he might have kept it quiet because he knew there'd be a mess if he said anything.

On the other hand . . . Did he start that business of not coming before or after she got the mass-reducer attached to her blouse? I tried to think back, but couldn't recall the sequence exactly—no, it was after, of course; we'd got the reports of our health and fitness, and that's what started it. Was it really Michele that made him not want to come, or was it because he'd failed in smuggling out a mass-reducer? Or was it because he'd succeeded?

And then there was that episode of eating, and his remark afterward about not committing suicide yet. Could they have made him come, but made sure that he wouldn't get back? Or maybe have given him orders that none of us were to get back, and he wouldn't do it? He might as well kill himself up here, if that was the case, because his life wouldn't last long after we returned, and the way he'd die then wouldn't be pleasant.

Maybe that was it. Maybe Janice had approached him, and he had to go along with her, but with one of the mass-reducers she wouldn't be able to copy because it was so small; and then he got me to come along with him to see her—probably told her I was there and he didn't dare to come alone . . . I tried to think back to see whether he told me to come with him, or whether I suggested it, and I couldn't remember. The only thing I could remember was that I was the one who spotted the fact that a mass-reducer was missing. But he'd left it on the scale for me to spot—maybe. But then if they didn't have it, why would they want him to kill us all? That would be far more likely if they did have it.

Maybe he told them what to do, and then had to go through with coming with us, and getting killed himself along with us. Then they'd have the mass-reducers and we wouldn't, because we had the whole secret here—unless Keith had managed to steal it somehow, which I couldn't really believe—perhaps. But if that was the case, what was the sense of that elaborate rigmarole with the blouse, if Mike could have just told them how to make one?

You could only fit things together in a rational sequence if you left something out.

Evidently, earth was as puzzled as I was, or they never would

have sent me a message that Mike might have been bright enough to intercept—or at least suspect that something was going on. They wanted me to find out what I could from him, obviously; why else tell me?

But how? I couldn't just casually drop Janice's name without making him suspicious—unless there was no reason for him to be suspicious. And if there was, he certainly wouldn't let on that there was.

Lovely.

“Man, you're really lost in space,” said Mike. “What's the problem?”

“I give up,” I said.

“Can't find where the trouble was?”

“I know where I thought it was,” I answered, “but I think it must have been something down on earth.”

“Well, let them worry about it.”

“I was just coming to that conclusion.”

“I think I see something out there,” said Michele.

There was a disturbance in the water—that is, the hydrogen, but it was more natural to think of it as water—that was rapidly approaching. As they came closer, we could see that it was only two, not a whole army, which gave me such a feeling of relief that only then did I realize that I had been unconsciously apprehensive about St. Peter's going away to get something to blast this UFO he'd discovered out of existence.

“How do they manage to move so fast?” said Mike.

“They don't seem to be swimming like tadpoles,” replied Michele. “Probably they use some kind of jet propulsion, like a squid.”

“They sure do a good job of it,” he mused.

“Look,” I said as they got closer, “the other one’s blue.” You could still only barely make out St. Peter, but his companion, a deep cerulean, almost ultramarine, stood out against the faintly orange background.

“I wonder if it’s his king,” said Michele.

“Probably not,” I said. “If they’re ~~smart~~—”
“And they are,” said Mike.

“—they won’t be bringing anyone important to look at us until they’re sure we’re here in peace.”

“Maybe it’s just his wife,” said Mike.

“Or her husband,” said Michele, looking at him.

“I vote for his wife,” he said. “Did St. Peter have a wife?”

“I don’t know. I suppose not. Why?”

“Trying to think of a name,” he said. “Let’s see, what’s a famous woman? Cleopatra. Why not?”

“That shows the kind of channels your mind runs in,” she said.

“What’s wrong with it?” he said. “she’s got to have a name, doesn’t she?”

“If it’s a she,” I put in.

“It’s got to be; look at her color. Can’t you see him going to her and saying, ‘Will you marry me, Cleo darling? You have such beautiful blue skin, it’s got me right off my head—no, not my head, I haven’t got one; it makes me lose my marbles.’”

“Cut it out!” said Michele.

“What’s the matter?”

“You forget those things are people!”

“Well so what? They’re funny-looking, people or not.”

“Anyway, here they are,” I said. “What’s the blue one’s name going to be?”

Michele started to speak, but didn't have anything really ready, and Mike broke in, "Cleopatra or nothing. She had her turn."

"All right, Cleopatra," I said.

They stopped a little way away from the ship, and began talking together, turning themselves into a garden full of shapes alternately. "Isn't that beautiful?" said Michele. "And to think it means something!"

"Probably means, 'Get ready for a shock,'" said Mike.

"Paul, Michele, Michael," said St. Peter, and then made a series of shapes, and the other one copied them.

"That's her name," said Michele. "He's introducing her." Into the microphone, she said, "St. Peter, Cleopatra."

Cleopatra thought the whole proceeding was immensely funny, especially her name; and St. Peter found the laughter contagious. After a while, though, Cleopatra made some clumsy attempts to say all the names, especially her own, punctuating everything with spirals, with St. Peter evidently giving her hints at pronunciation. If anything, she was rather quicker than he had been, and now we had two people imitating the sound of Michele's voice.

The pair then swam over to the ship, and began crawling all over it, pausing at each nook and cranny on its surface, and spending a long time out of sight, going over the first stage above us, and examining at great length the engines of the second stage below us. Finally, each appeared at a different window, and peered in with twenty or thirty eyes apiece. They just stayed there, glued to the windows without moving, until we began to realize what life in a fishbowl was like.

"Let's operate some of the controls," I said, "so they can see

what they do.”

So Mike went over to the mass-reducer console and pushed a few buttons, letting the ship sink a little, and then a few more, letting it rise to where it was. Michele operated a couple of the thrusters that were at a safe distance from the creatures, and the ship turned slowly, spewing a huge plume of fire into the ocean.

“They’re really impressed,” said Mike. “All their eyes are on the outside now.” But they quickly looked back in to see what we would do next. We were, of course, naming all the things we touch, and they were repeating the words, indicating by “good” that they understood. Gradually, Michele had introduced the demonstrative pronouns and the verb “to be,” and had showed them how to ask questions; and within an hour or so, we had quite a conversation going on.

Toward the end of the inspection, Cleopatra said, “What is that Paul beside?” and Michele, who did most of the talking and interpreting, corrected, “What is that thing beside Paul? It is a communicator.” I pulled it over above my lap and said, “I’d better be getting a report out anyway,” and so I typed, “Our Jovian has come back with a companion. They hear radio waves, so this will be brief, because we can’t talk to both you and them at the same time. They’re very smart, and are learning English fast.”

The two Jovians looked puzzled, because, though they could hear the signals, the letters in the code I was sending were, of course, very different from the speech we had uttered. St. Peter gave a prolonged series of beeps back into the speaker, and asked (also making his triangle—apparently talking in two languages at once, as they seemed to do frequently) “What is

that?”

Both of us learned a great many new ways of stating things before we were able to explain to him that it was another language; and we had even more trouble when we tried to tell them that it was not addressed to them at all, but was to a different “everything,” which was Michele’s substitute for a different world.

This oxymoron fascinated them. “Everything is not everything?” said St. Peter. “It is one everything and one everything?”

I am not going to attempt to reproduce the whole of this conversation or of most of our conversations at this early stage, with all their false starts and backtrackings. Both sides had to surmise what the background knowledge of the other was, and to build on it, with the tiny—though ever-growing—vocabulary we had to work with. For instance, here, Michele, as I recall, said something to the effect that what they thought of as “everything” was not all there actually was. She got across some notion of “place,” as I remember, and then said there was a place “beside” all the places they knew, and pointed in the up direction.

It had of course never occurred to them that there was anything at all above the surface of their world, since (as we later discovered) even if you went up there, the atmosphere with its constant, more or less undifferentiated thin cloud cover that reflected the light from the center of the planet didn’t show you stars or even a sun, which gives even the most primitive people on earth the notion that there might be other worlds.

The grammar of our conversation picked up apace as we

threaded our way through these complexities, because the Jovians forgot not one thing that was told them; and they very rapidly began asking structural questions when irregular verbs began behaving differently from what their lightning intellects led them to expect.

But after three hours of this, St. Peter evidently felt that that was enough for now, and said, "Now, Paul, you come out beside the ship."

"No," replied Michele, "I will come out." I protested, and she said, "I can talk to them better. Besides, I want to get a good close look at them. I'm the biologist, after all."

By this time, we had decided to leave the microphone on all the time, since we felt it wouldn't be polite to seem to be whispering behind the Jovians' backs; and so they listened attentively while we entered on a rather lengthy discussion as to what to do.

There was, of course, nothing really that could override Michele's contention that as a biologist she was the logical person to examine and be examined; but Mike would have none of it for quite a while, until finally she withered him with a remark about his being the first to eat, and our not giving him another chance to commit suicide. But she did agree to having a rope attach her to the outer door of the airlock of the first stage, with me there, suited up in the open airlock, ready to pull her back at the slightest indication that one of them might want to cart off a specimen.

Both Michele and I then went up to the first stage and got into our cumbersome space suits, while Mike stayed below, explaining what was going to happen and why we wouldn't look the same when they saw us at the door. We closed the

inner door, opened the outer door slightly, and let Jupiter replace the oxygen that was in the lock. This stage was very delicate, since the mixture of hydrogen and oxygen was explosive; so neither of us moved for about fifteen minutes after the door opened. Then Michele swam out, the rope about her waist, attached firmly to the makeshift hinge of the inner door (we were taking no chances), and looped around my wrist.

She dropped down to where St. Peter and Cleopatra had been patiently waiting for her.

“Here I am,” came over my earphones, and she reached out a hand. Both St. Peter and Cleopatra made themselves into an arm with a hand, and imitated her; and the first handshakes in outer space took place without a hitch.

“Paul,” she said, “I think we were right. As near as I can tell with these gloves on, the spheres they’re made of are a thin shell of plastic with gas inside that gives—probably gaseous hydrogen. They’re a little stiffer than our hands seem to be, but maybe that’s because they’re trying to imitate my gloves.

“The colors are very subtle up close; they seem to be an overlay of several semi-transparent colors, like a pearl. Their eyes are transparent, with little veins running through them. They look black at a distance, like the pupils of our eyes, because you can see a little inside them; there’s a tiny bit of the animal’s kind of reflecting from the back—you know, the way cats’ eyes seem to glow in the dark.

St. Peter then said, “Now I will examine you,” and suddenly swarmed all over her. My hand tensed on the rope and I caught my breath, but Michele seemed quite calm. She went on with her reporting of impressions, and I could hear a high-pitched

series of beeps which indicated that Mike was typing what she said into the communicator.

It was quite clearly a friendly examination, even though it looked as if Michele had been attacked by a giant amoeba. She shifted from talking to me to explaining to St. Peter the parts of her body that he was asking about (his eyes were all over her, and you couldn't tell what he was mainly interested in unless he asked); and he began saying in reply to her explanation of the articulation of her arms and legs something about "other things that cannot talk," and she said "That can move and see?" He said Yes, and she said, "We call them animals." "You are much like our animals," he answered.

He began explaining that when they moved, the spheres they were made up of rolled on one another and allowed the liquid they were immersed in to circulate through the interstices between them, and Michele and he had more or less agreed that this was more or less the equivalent of our breathing, and that this meant that they would always be more or less in motion, when suddenly the rope went taut and snapped, nearly cutting my wrist in two.

Michele had slipped away from St. Peter and with a terrified scream, she plummeted to the hell at the center of the planet.

Ten

"**G**et her! I shrieked. "Damn you, get her!"
For a fraction of a second, St. Peter and Cleopatra just stood there; but by the time I could get the words out of my mouth, they had recovered from their surprise, and both shot down into the depths after her. All three disappeared from sight in a flash.

As I waited the fourteen hours that the next three minutes took to go by, I was not helped by Mike's voice cursing and swearing in my earphones, "Why the hell you let her go out first when you might have known something like this would happen! I told you the goddamn rope wouldn't be any good! (He hadn't.) The trouble is that these goddamn women have to have their goddamn way all the time, and you gotta spend half your goddamn time rescuing them and the other half waiting for them to get their face on straight! God, how I hate women! Where are those bastards? If they don't bring her or her body back, I'll pull them apart bubble by bubble! You'd think they could have realized that if she wasn't like them they ought to be caref—where the hell *are* they? Don't you see them?"

“Will you shut up?”

“And why the hell aren’t you *doing* something? She’s your sister, in case you’ve forgotten!”

“Mike! Shut up!”

I’d never actually heard him rant before. He knew as well as I did that she’d lost her mass-reducer, and was accelerating down to the center of the planet; and even if I could reach her, she’d be so heavy there’d be no hope of my getting her back up with my reduced mass. The only chance she had of not being incinerated or crushed to death by the tremendous pressure down in those depths was that the Jovians could get to her before the pressure got too much for them, and that they’d be strong enough to swim back up with all that weight. So all I could do was stand there in the doorway of the airlock and wait—and pray.

Eventually, I thought I saw a speck below me, which turned out to be the three of them, quite close. Evidently, the hydrogen below was thick, and only seemed to be transparent. “They’ve got her!” I shouted to Mike.

“Is she alive?”

“I don’t know yet. She doesn’t look conscious.”

They were carrying up a dead weight, and it was quite a struggle for both of them. When they came within earshot, I shouted, “Is she alive?” It was foolish to shout, since the only thing that happened was that my head rang inside my helmet, and the radio didn’t produce—to them—any greater volume.

“Alive? What is that?” said Michele—or her voice, which might have been either St. Peter or Cleopatra. “I do not understand.”

“Never mind,” I said. “That is, okay. (That word they had

learned.) Bring her here. That is, come with Michele here.” It was a beautiful time to be struggling with a language barrier.

But they understood and brought her to the hatch of the airlock, and laid her on the floor. Immediately, the ship listed severely. “You go outside—there,” I said. “We will come later. Now I must help Michele.”

They left the airlock. I closed the outer door and said, “Mike, give me air in here. I’m going to look at her. She’s still unconscious.”

“Is the door closed?”

“I did it myself. Just get this water out and air in pronto.”

As the little room was emptying, I was standing looking at Michele in her space suit, not daring to move to prevent sparks that would blow us up, with no way to find out if she was alive or not.

I consoled myself during this maddeningly slow process by thinking that if she were alive, this few minutes wouldn’t make any difference; she’d probably recover. If the space suit were damaged by the pressure or a rupture, she’d be dead, and delay wouldn’t matter.

It didn’t help, of course.

At last, the liquid was out of the chamber, which meant that it was full of oxygen. I reached down carefully to pull off her glove and take her pulse, and felt her mass-reducer.

“Idiot! Nincompoop! Fool!” I said to myself. I had been so convinced that it had been knocked off that it hadn’t even occurred to me to look for it. It twisted the dial in the direction of “lighter,” and the ship righted itself. As quickly as I could, I got the suit off, and felt her pulse.

It was beating.

I was about to lift her back through the inner door into the ship, when she said faintly, “Paul?”

“Thank God!” I said.

“What happened?”

“St. Peter must have twisted your mass-reducer when he was examining you, and you fell.”

“That’s right.” Her voice was stronger. “I remember. He had my wrist, and then all of a sudden, I felt heavy, and went down. I guess I fainted. Did you come down after me?”

“No, they did. Thank God they can swim so fast. You went down like lead. How do you feel?”

“I’m all right now. I’ll have to go out ~~and—~~”
 “Oh, no, you don’t. You’re going to sit inside here until we’re sure you’re all right. We’ll hook you up to the medical console and let earth decide if you can go out, or if we have to go back and have you looked after.”

“Paul, you *can’t* do that! Not now that we’ve found them. I’m perfectly all right.

“We’ll know about that in an hour. Can you walk? No, never mind, I’ll keep carrying you. You’re light as a feather.”

“I can walk.”

“Forget it. It’ll be a little awkward going through this door, but I’ll manage. Look out for your foot there. Okay. Well, here she is, Mike.” Mike was, of course, right there inside the door of the first stage.

“I’m okay, Mike,” she said.

“Good,” he said, and went back down.

“Wow!” she said, looking after him. “It’s nice to be loved, isn’t it? Listen, Paul; if I’ve got to be hooked up to that stupid machine, I’m going down now and get it over with. I am

perfectly all right, but I can see why you don't want to take my word for it. No, don't bother to carry me; I can walk."

I followed her down, and as I did so, I noticed St. Peter, full of eyes, at one window, and Cleopatra at the other.

"She is alive," I said into the mike, and then Michele, who had to sit in her seat attached anyway to the "stupid machine," took over. Mike was over by the mass-reduction console doing something-or-other, not saying a word, and at the moment I was in no mood to engage in small talk with him.

"I am not hurt," she said, and one of them said, "Hurt? I do not understand."

There followed a tedious, lengthy explanation of what we meant, which involved things like tearing a piece of paper, bending wire, and so on, before they caught on. It was strange, because they were really slow in grasping this one concept.

Finally, St. Peter said, "Now understand I . . . I understand now. But did you . . . (he was searching for a way to say it) was it good to you me to hurt you?"

"Was it good for me for you to hurt me?" she said musingly. "Oh! I see. Did I want you to hurt me? No, of course not."

"I do not understand."

"It was an accident."

There followed another lesson, where Michele kept saying that sometimes you do things without wanting, and he seemed to understand, but kept interjecting "But hurt?" until finally Michele asked, "You mean you can't be hurt by accident?"

"Yes. Good! Can you?"

"Yes, of course."

"Like animals. We must have much . . . not do acts of hurting . . . acts of hurting?" he repeated and she nodded, which he

knew how to interpret, “acts of hurting by accident.”

“You have to be careful.”

“To be careful is to think not to do acts of hurting?”

“Yes. Good.”

“We must be careful with animals. And with you.”

“Yes. But with you, you can’t be hurt.”

“We can be hurt, but only wanting.”

“You’re a strange people,” she said. “Among us, it is possible very easily to be hurt.”

“Do you also become . . . not moving, not seeing, not doing, as the animals do?”

“Do we die? Yes.”

“What is not die? I understand die. What is the word that is not die?”

“Live. I live; I am alive.”

“Ah. Live is verb. Alive is adjective. Die is verb. What is the adjective?” (She had taught them the names of the parts of speech.)

“Dead.”

“Paul said you were still alive. So you could have been dead.”

“Yes, he was afraid I had died. Do you people die?”

“Persons do not. I did not think that persons could die. Yet you are persons, because you talk and can understand. Among us, animals cannot understand, and only persons can understand.”

“That is true among us also. But persons die among us. Do you live forever? Live and live and live?”

“Not as you see us, but we do live forever, yes. But I must talk about that when I have more words. Do you have an instrument, as we have, that makes words quickly, so that you

could give me all your words, so that I could know them and how they greet each other?” It developed that what he meant by this was a dictionary and grammar.

“We have books, but they are different.” She showed him one, and pointed out the words, holding them up to the window. It was look-say, but he caught on that it wasn’t really a new language, but a different form of the language we were speaking. And he asked then if the sounds we made on the communicator were this kind of thing, and when we said Yes, but that the letters were arranged differently, he asked to hear it to see if he could understand.

“Paul,” said Michele, “Why don’t you ask Jonathan to see if somebody down there would read the dictionary to us? And an English grammar. We could have them listen to it, and he could hear the communicator while we’re asking them. Tell him what you’re saying.”

“You mean you think they can break the code? And memorize the dictionary on one hearing.”

“Why not? They haven’t forgotten anything we’ve said so far.”

“Brother!”

In any case, I began typing to Jonathan, assuring him once again that I wasn’t crazy, that we were going to try an experiment in communication, and would he please find a dictionary and begin reading it to us, and send it by radio instead of laser, so our radio here could amplify it and output it to the Jovians.

This took a bit of explaining and discussion between Mike and me, but it seemed possible. St. Peter didn’t seem to make much out of the conversation, whether because of the code or because of the many words he wouldn’t know wasn’t clear.

In any case, a half hour later, Jonathan's voice began reading a collegiate dictionary that they had there in the space center, and for the next three hours, the Jovians sat like eggs, listening. As it happened, we moved into our five-hour blackout at this point, and all we had arrived at was the letter E.

At the silence, we explained as well as we could what had happened, and they wondered if we could manage the process with more "celerity" the next time.

Our conversations at this point took a surprising and alarming turn. The Jovians suddenly were possessed of a vocabulary far surpassing our own in the A to E range, and were as ignorant as before in words beginning with the other letters of the alphabet. They naturally assumed, at first, that we knew all the words they had heard, and quickly learned that sometimes we were as at sea about what they were saying as they were when we used words outside their range.

For instance, when the discussion over the sudden silence from earth was over, St. Peter remarked to Michele—as near as I can recall, "I am ecstatic with beatitude that you are not delacerated in actuality because of your contretemps; it would have been calamitous to me to have been the author of a catastrophe."

Michele just managed to be able to say, "Why, thank you, St. Peter," before she broke down in peals of laughter.

"Have I exacerbated her distress?" said St. Peter, looking at me with fifteen eyes or so. (After a while, you caught on somehow to what these people were mainly looking at.)

"No," I answered, biting my lip and swallowing hard to keep a straight face. "She's doing what you do when you do this," and I moved my hand in an imitation of the backward somer-

sault they made.

“Ah, she is amused! I am consoled. But why? Is my employment of your language erroneous?”

“No, not exactly,” I answered. “But we actually use only a few of the words you’re learning, and somehow, we put them together differently.”

“I comprehend. There is an art to the employment of words; I assumed that when I became acquainted with so many words that seem to say the same thing. But this coarctation will soon be alleviated when we have the aid of other books in which you use words correctly. Erewhile, I hope it will not be egregiously burdensome to you to bear with our cumbersome babble. You do not have any difficulty understanding me?”

“No, you’re perfectly clear.”

“Admirable.”

“But do you agree that it would be better if we heard the additional aspects of the dictionary before we displayed our abodes to you? It would be cunctatory, I admit, but if you are amenable, it would enable us to ascertain by comparison with the definitions which words are the common ones and effectuate a more elegant conversation; this dyslogia is annoying, and the delay would not be abhorrent, I hope.”

“Certainly, St. Peter,” I said.

“Then we will busy ourselves consolidating the acquisitions so far, if this is agreeable to you.”

“by all means.”

“What’d he say?” said Mike.

“I’m not sure, frankly, but I think he meant that they want to hear the rest of the dictionary so they’ll be able to talk down to our level—and I gather he was apologizing for the delay

before they take us to where they live.”

“Man! From ‘Me Tarzan, you Jane’ to this in one easy lesson! So they’ve already figured out that we’re just this side of idiots.”

“It kind of looks like it, from their point of view.”

“It’s going to be a long stay. Somehow, I can’t picture myself being condescended to by a blob of soap suds.”

“You realize what he’s saying, by the way,” said Michele. “They’re not only memorizing the dictionary on one hearing, they’re checking the words with each other to see which are the usual ones and which aren’t—probably they’ve figured out that the words used in the definitions are the ones everybody knows. Can you imagine having a mind like that?”

“I’m not a hundred per cent sure I’d want one,” said Mike. “And certainly not if it meant having a body like that.”

“Really, Mike!”

“Really yourself, and see how you like it.”

“Paul, remember how Grampy used to listen to talking books when we were kids?”

“What about it?” I asked her.

“Remember how he used to turn up the speed on those old records so you could barely hear the words?”

“I think I see where you’re headed.”

“Right. Instead of having poor Jonathan read the dictionary, we can just ask him to go to the library and borrow the disk they’ve got the talking version on instead of ordering a printout, and then broadcast it to us at the highest speed they can stand. That may cut the time down a lot. And they probably won’t be satisfied with just the dictionary; we could beam up our best literature, and they could learn all about our

culture, and—”

“Good God, Michele!” broke in Mike. “It’s going to be bad enough having them know a ton of words we don’t, but for them to be able to teach us our own literature and history is too much!”

“What’s wrong with it? If they can handle it?”

“I don’t think *I* can handle it!”

“I agree with Michi,” I said. “I don’t see any problem.”

“You wait till they start treating you like a four-year old.”

“Well, so what?” said Michele. “We *are* four-year-olds in comparison to them. You can see that already.”

“Anyway,” I said, “They’re very polite.”

“That just makes it worse,” he said.

“Well, even if it is humiliating, I think we should do it, if they want us to; it’d be a friendly gesture.”

“Okay, go ahead and have your way. You always do. But I warned you.”

So I told St. Peter what we were planning, and he was “enraptured,” as he said, at the idea. “We had anticipated asking you,” he remarked, “but were not certain of your acceptance of the design.”

So we made our request to Jonathan as soon as we got back into communication again, and an hour later were informed that the only Talking Book dictionary the library had at the moment was the complete Oxford English Dictionary. “So they sent it over,” he said; “It has the history of the usage of the words too, you know, and so it might be useful if they’re as brilliant as you say they are. I’m going to start over again from the beginning on Fast Forward. Let me know if it’s too fast.”

Mike groaned, and said, “Oh well, what’s a few thousand

more words we've never heard of?"

Eleven

My father had had a copy of that dictionary in the old days when things like that were in print and not on digital disks. The original print version, as I remember, occupied thirteen volumes; and so it is not surprising that the reading of it—which we couldn't even hear, it was going by so fast—took two hours.

Even so, the creatures outside didn't seem to be having any trouble, though they were a good deal more concentrated than they had been, and didn't spend much time conversing among themselves in their own language; only making a remark here and there when some interesting word appeared.

We had a number of housekeeping details, sent up by Jonathan on the laser, to see to; so we weren't reduced to twiddling our thumbs while the Jovians were soaking up our language and its history. I was typing back every detail of what I could remember, and informing the ground that we would be moving soon, and wondering whether they would be able to keep track of us. They seemed to think there would be no difficulty, since any information they sent, even by laser, would

cover the whole of the Red Spot, and it was unlikely that the homes of these creatures were outside, where there was nothing but enormous storms.

“Please tell your friends,” said St. Peter when the reading was over, “to accept our profoundest gratitude. We have been able to circumvent what might have proved an insuperable obstacle to our continued amicable relations. Don’t you think?”

“It’s a lot better than it might have been,” I said. “The only problem now is that you know so much more than we do.”

“We surmised that, you know,” said Cleopatra. “But you have nothing to be ashamed of. After all, you are here, and we have not traveled there, wherever it is.”

“You’re very kind.”

“No, really. What matters is to make the most of the ability one has, not the ability itself.”

“Good God!” said Mike. “Already they’re getting philosophical on us!”

“Relax,” I said. “At least they’re not going to rub it in.”

“That remains to be seen.”

“Oh, for heaven’s sake, Mike,” Michele was saying when St. Peter (who was experimenting with different intonations, in order to give himself a distinctive sound of voice, and had come up with a kind of hybrid of the three of us) said, “Now we would like to invite you to behold our domiciles. We will lead. Can you make your vessel follow?”

“We can try,” I said. “Let us discuss it among ourselves for a minute.” I turned to Mike and said, “What do you think?”

“It depends on how fast they go, I guess. I suppose we ought to use the pitch and yaw thrusters and go sideways, with the first stage pointed in their direction, or we might snap it off.

But there's no way of telling how well we'll be able to control our speed through this stuff."

We spent a few minutes on details, and then Michele, who was now at the mike and would serve as a lookout said, "I think we're ready now," and suddenly they were off like bullets in the direction they had come from.

"Man!" said Mike, "look at them go! Well, that means Number Three with corrections from Number Two. You take care of the direction, will you, Paul, and I'll handle Number Three and see if I can regulate the speed."

"They seem to have stopped up ahead," said Michele.

"That's a help. We'll be able to keep them in sight," said Mike.

The ship shuddered slightly and began to move, a huge plume of blue fire spouting into the sea behind us. The first stage gave a number of creaking noises, but we didn't see any hydrogen ocean pouring in on top of us (we were ready to close the hatch if that happened). Mike looked back for a moment to see if we had begun to move, and said, "Well, if there wasn't any water on Jupiter before, there is now." The hydrogen and oxygen of our tanks, of course, created water as the product of the burning.

Gradually, we picked up speed. We had no mass to speak of, of course, but the liquid was fairly viscous, and we had to move this enormous object through it, so there was a good deal of resistance. "We don't want to do too much of this," said Mike, "at least if we want to keep that first stage."

"And we do," said Michele.

"I had a feeling you'd want a place to store specimens in," he said. "Maybe we could even smuggle one of them aboard."

“Mike! What’re you saying!”

“Relax, it was just a joke.”

“Well I for one don’t think it’s very funny. I have a great respect already for these people, and—”
“Sorry, Michele, but I just find it a little hard to have a ‘great respect’ for a bag of golf balls, even if they can memorize the dictionary and snow us with our own words.”

“Well all I can say is I’m glad they don’t have the same attitude toward us.”

“They can have any attitude they want, as far as I’m concerned.”

“Look,” I said, glad of something to change the subject, “Those must be plants.”

We were passing orange fronds that seemed to be hanging down from a kind of matting on the surface of the ocean. They looked a little like ferns, magnified a couple hundred times, with branches and something that must have corresponded to our leaves: little circles or disks with the center open, about the size of a quarter (it seemed, but sizes were hard to judge because we didn’t have any reference to distinguish the relation between size and distance) with frayed edges, scattered about the rather flattish branches more or less at random, and all oriented one way or another toward the light at the bottom.

“They must get their nourishment from the atmosphere above,” said Michele, “and that yellowish-orange must be the color of whatever corresponds to chlorophyll here. They obviously trap the light the way our plants do.”

The plants were rather thinly spaced at first, but got more numerous as we went on, and larger, sometimes reaching halfway down to where we were. They also showed a rather

great variety of shapes, some like iris leaves, stiff and swordlike, some delicate and hairy, and so on; but all that same orange.

“But it gives you a kind of upside-downy feeling,” said Mike as we passed what was probably a forest on our left—a dense grove of plants of all sizes, some of which left tentacles like the moss growing on trees in Florida, hanging down until they disappeared into the apparently transparent murk below. The feeling wasn’t exactly like a forest upside down, however, because the gravity in earth’s trees gives you the feeling that everything is being pulled in the direction of the roots, and the trees and plants are thrusting up out of it, while here, the pull was toward what on earth would be the sky, and you had the feeling that the roots were holding the plants back, so to speak.

Not that the experience wasn’t serene, after you got used to it. Actually, it was the orange color that it took us a while to adjust to, since orange for us is exciting, not restful like green; but gradually, being in these groves began to have more or less the effect on us that a day in the woods has on earth.

“Look!” said Michele. “That’s got to be one of their animals!” and she pointed to what looked for all the world like a miniature version of the old Volkswagens swimming among the trees. It had a rather large eye or dark expanse on the front, which would correspond to the windshield (except that it wasn’t rectangular, of course, but more oval), and a mouth below that could have been a radiator grille. But as it swam into closer view, we could see that it was longer, and had something like the hinges in a doll’s legs in the middle of its body; and with that, and a few appendages, it swam, moving the back part more or less as our fish do.

We found later that Jovian animals are just as diverse-looking

among themselves as our animals are; and the same, of course, went for the plants. Some of the animals were as large as our whales, also; but these kept themselves in the vastness of the central area of the Red Spot, and we never saw any. Most of the ones that swam around the woods and buildings of the place we visited were about the size of a German Shepherd dog downward to tiny things we couldn't see clearly through our helmets. Apparently, the more articulated their bodies were, the more intelligent as animals they were; but there was only the one species, Cleopatra told us, that actually could think, and that was the bubble people of whom St. Peter and Cleopatra were members.

"We find it fascinating," someone told me later—St. Peter, I think it was—"that creatures of an intelligence rather below that of our most intelligent animals can think. It shows rather graphically the difference between what you might call brain-power and thinking itself. You are not very efficient as information-processors; but you do quite remarkable things with the information you are able to hold in your minds. And the fact that you have been able to create machines that supply the lack of information-processing ability is a testament to what can happen by understanding relationships among pieces of information, rather than simply connecting the pieces."

"You think that's the difference, then."

"There is not the slightest question of it—in my mind, at least."

"Maybe that's why artificial intelligence never lived up to its promise of making a thinking machine."

"If it ever is to think, that is what it will have to do, I am sure," he said.

Michele found out later that we were right in our conjecture that all the living things (including, apparently, the people) were made of plastic; but of an extremely intricate series of polymers that had never been made on earth, and so far (from the one or two fragmentary samples we were able to bring back) not duplicable here. Cleopatra later showed us about them, and described differences in taste and aroma that they had; but since we couldn't eat them we couldn't verify anything about the taste (and so his terms simply indicated differences to us), and since we never left the ship except in our space suits, aromas were impossible for us to experience for ourselves also.

We never did find out whether there was any sound on Jupiter, or whether the Jovians heard anything in our meaning of the term. Undoubtedly sound did exist; but we couldn't hear it inside our insulated space suits (though we could hear radio signals without trouble), and no one of the Jovians ever mentioned anything in connection with "hearing" except our radio signals—and, of course, a sense which responds directly to radio signals would probably be more of an extension of sight than what we think of as hearing, since radio is just a very low-energy kind of light. Conceivably, since sound is most useful in warning of danger, then if they could not in fact be harmed against their wills, as St. Peter said, they had no real need for such a sense.

This inability to be harmed caused some discussion among us as we were traveling. Michele brought it up, and Mike answered flatly, "I don't believe it."

"Why not?" she said. "They certainly seemed surprised that we can be harmed accidentally, and there was no reason for

them to be lying.”

“It’s too much like mysticism for me,” he said. “They can be harmed if they want to be, but not if they don’t want to be. If they can be harmed, they can be harmed. They’re probably just tough.”

“Maybe they’re like the Indian fakirs,” I said. “They can walk on live coals and lie on beds of nails, and all that.”

“Fakers is right. I don’t buy mind over matter. Actually, Michele,” he said as Michele was about to interrupt indignantly, “I can believe that they *think* they can’t be harmed against their wills, because they probably don’t have that much that could actually do them any damage. But that kind of idea is dangerous if they run into new forces—like us, for instance. And maybe they just live a long time, and so they think they live forever; but if they use energy, they use it up, and eventually, they’ll run into an energy crisis, and then where’ll they be? Nope. They die, or the laws of physics are different on Jupiter—and that’s something I have to see proved.”

“You physicists and your physics!” she said. “You think everything is explainable in terms of attraction and repulsion. If you’d taken the trouble to study a little ~~biology~~ ^{As far as} I know, nothing in biology goes against the basic laws of nature,” said Mike.

“That shows how far you know,” she answered, “if you think the laws of nature are summed up in the laws of physics.”

Well, things were getting back to normal. They went on, both of them obviously having a great time sparring with each other, just as they had before Michele said that she was coming with us. Their voices got higher and higher, and they were just at the point where, in the laboratory, one of them would stalk

out only to come back a couple of hours later as if nothing had happened, when I said, “Mike, pay attention; they’ve just turned aside.”

Both of them looked out as St. Peter and Cleopatra made about a forty-five degree deviation from their path; and soon we saw why. We were headed for a solid wall of plants.

“Oh, oh,” said Mike, “we’re going to hit! I can’t steer this thing that fast!” He gave a burst to the yaw thruster in the direction we were going, but there was no hope of its reversing us, or even stopping us now, and the wall was approaching at an alarming speed.”

“Brace yourselves, everybody!” he yelled. “Let’s hope the first stage will cushion the impact!”

“More mass on the first stage!” I shouted to Michele. “We may drop below it, or maybe ram through!” She pushed several buttons and we dropped maybe a quarter of a kilometer, and then hit the wall.

But there was no crash. The wall wasn’t solid after all, but actually consisted of innumerable strands of incredibly long orange grass; and they simply parted as the first stage entered head-on, and gradually slowed us down until we came to rest, still attached to the first stage, about a meter or so from the wall itself. The strands of grass hung like a beaded curtain on either side of the first stage above us.

“Well!” said Mike finally, when things had come to rest. “That wasn’t as bad as it might have been. Everybody okay?” He looked over at Michele.

“Can we get out of here?” she asked.

He fired another brief retro burst. The ship shuddered, but didn’t budge. “First stage’s stuck,” he said. “I’m afraid I’ll rip

us apart if I try anything; I don't know how strong those welds we made really are."

I was radioing to earth meanwhile, and as I typed, I said, "Let's not try anything drastic until earth figures out what to do. I've given them the situation, and we should be hearing from them in an hour or so."

"And meanwhile," said Michele, "what is this stuff we're trapped in?"

St. Peter and Cleopatra had by this time come back, and were waiting by the ship. Cleopatra came up to the window and Michele asked her about it, and she said, "You have become immersed in the unique vegetation which grows around the periphery of our world. At first, I thought you might have come from outside it, but St. Peter told me that you come from a completely different cosmos above us."

"Has anyone ever been through this to find out what's on the other side?" she asked.

"A few are said to have tried," he answered, "but no one has ever returned. Most never make the attempt, because it is prohibited to do so; only those we call (and here he made a series of shapes), which would roughly translate into 'unfortunate people,' have ever hazarded it; and the fact that those who do never return tends to dampen curiosity."

"Can't you just go underneath it?"

"No. No one has ever plumbed a depth beyond which there is no wall; it extends far below the level at which we overtook you in your fall, which itself is about twice as deep as we feel comfortable in going."

We looked down. The grass did seem to vanish far below us in the apparently transparent murk, without giving any sign of

having a bottom.

“Say!” said Michele. “Where are we, Mike?”

“What do you mean? On Jupiter.”

“I mean, where on Jupiter, you clown! I have an idea. Can’t you figure out our position with that thing?”

Mike punched some figures into his computer, based on the position we had been in and our speed and direction. “Hey!” he said as the chart came up on the screen. “Look at that! According to this, we’re just outside the Red Spot!”

Twelve

"I thought as much," said Michele.
"You mean this wall of plants defines the edge of the Red Spot?"
"They said it was the edge of their world, didn't they?"
"Then it must be this wall of plants that keeps the place calm and separated from all the storms outside."
"It's a mercy we didn't go through," said Michele, "or we'd have been goners for sure. Though I suppose it must be kilometers thick, because there's no sign of any disturbance as far in as you can see." She said to Cleopatra, "We have observed your planet from above; and if we're right, you have a wise prohibition against going through this grass; there's nothing but terrible storms on the other side."
"That is gratifying to hear," said Cleopatra, "though it simply confirms what many of us suspected from the fact of their being a prohibition."
"Can you imagine the poor people who tried to get through?" mused Michele to us. "Either they'd be trapped in the grass, or be tossed around in the tempests outside for the rest of their lives."

“And if they don’t ever die,” I said, “it’s a version of hell that beats any I’ve heard on earth.” We all shuddered silently.

“Shall we resume our peregrination now?” asked St. Peter. “Our destination is not inordinately far off.” “We can’t,” said Michele. “We’re stuck in the grass here.”

“Ah,” he said. “I was suffering under the misapprehension that you had merely paused for an examination of this peculiar attribute of our flora. But can you not extricate yourselves by tilting the top of the vehicle? It strikes me that the center of mass is outside the imprisoning vegetation.”

“God help us, don’t tell me that they know more physics than we do too!” said Mike. “He’s right, of course. All you have to do, Michele, is fiddle with the mass-reducer of the engine on the first stage, and that’ll make that end lighter, and then we’ll just gently twist ourselves free.”

Michele turned a dial, and the floor began to tilt. “Well, something’s happening, anyway,” I said. It was a good thing we were strapped to our seats, since we soon found the side wall to be underneath us, and could hear things sliding every which way above us in the first stage. But then we stopped tilting and began to move upward.

“We’re free!” said Mike. “Here, let me over there, Michele, and I’ll show you the readings I had on the first stage before you added mass to it.” He struggled over to where she was and, half embracing her, made the proper adjustments on the mass-reducer console, and the ship righted itself and went back up to where we had been earlier. Mike then resumed his seat beside the thruster console. “Okay,” he said, “ready to roll.”

“If you would follow us, please,” said St. Peter. “You need have no further trepidation; we will be more circumspect in our

deviations from a direct course in the future.”

So we “resumed our peregrination” in good spirits. Mike, in fact, had a look of almost gleeful triumph on his face for some reason. Suddenly, Cleopatra’s voice came over the speaker, “I would commence a cessation of forward velocity now.”

“He must have figured out how long it’ll take us to stop from what we did last time,” I told Mike. “I think you ought to give the same retro burst as before.”

Mike did, and we began to slow down, and then drift more and more slowly along, parallel to the wall of grass, and about a kilometer or so away from it. In a matter of a couple of minutes what must have been their city began to emerge from the apparent transparency ahead of and a little above us.

Again, as with plants, there was a mat of some sort on the surface of the ocean, projecting inward from the wall of grass some thirty or forty kilometers (as we later discovered); and from this ceiling, which was a kind of off-white and reflected the light from the bottom, there hung down slender cylinders, in proportion like threads from what hung upon them, but actually about as big around as your wrist. These formed a kind of anchor or trunk to which the buildings themselves were attached at various levels, some from cantilevered projecting rods, and others either on a side of the basic cable or even with the cable going right through them.

In one sense, the principle of the tree, we discovered, was what governed the arrangement of the buildings, so that no one building stood in the shadow of others below it. Their bottoms were all opened to the light, or had—I suppose you would call it floors—that tilted at various angles to let light and shadow into different rooms in the house.

The forces on the cables were practically negligible, we found later, because the buildings' walls were made of something with cells of gaseous hydrogen in them (rather like our Styrofoam, only more flexible and not able to be dented), and were so arranged as to float under water at the depth intended for them; and since the ocean was perfectly calm, with only the minor disturbances of people swimming with perfect streamlining and the animals making rather more awkward movements, there were no lateral forces either.

Design therefore did not have to take stress into account, and as a result the shapes of the buildings was imaginative in the extreme, with aesthetics the main theoretical consideration, and movement around and within the building the practical parameters. There were gently curving walls, bowed walls with huge openings in odd places, serpentine walls, walls that reminded me of the roof of the old chapel at Xavier University in Cincinnati, which I believe was a hyperbolic paraboloid—and a few, very few squared-off buildings like ours. In a way, the effect was rather like a forest of enormous upside-down Christmas trees, with the buildings taking the place of ornaments and garlands, and a kind of tinsel formed by the orangish plants and trees growing (upside down again, of course) from mats either between buildings or on sorts of patios or porches attached to some houses.

Contrasting with the rather garish and more or less uniform orange of the plants were the colors of the walls, which were for the most part light pastels—as varied as the colors of the people, though in general lighter in tone. Interestingly, there were some that seemed to us black, which turned out (after we asked about them) to be either infrared or ultraviolet; the

people there could see farther into both ends of the spectrum than we could. They said that they appeared to them to be completely different colors, totally unlike a kind of extension of either red or violet, but as different from either as red was different for us from orange. Of course, no further description of what they actually looked like was possible.

When a person wanted to build a new house, he would select an open site, and he and the neighbors around, above, and below him would get together and discuss what colors he would like the walls, how this would affect the colors of their walls, what shapes he wanted in his rooms, how this would make corridors between the buildings surrounding him, and affect movement and so on.

When I was being told about this later, I raised the question of what happened when the owner wanted something that the people around him didn't like. St. Peter said "It depends on which person feels most strongly," which I took to mean that they were in general willing to yield to each other. When I pressed him, and said, "But suppose two people really want opposite things?"

"Then we take it to court," he said, as if the answer were obvious. I thought that they must be even more litigious than we were, if matters of aesthetics were settled in court cases. "You mean," I said, "that if I want pink walls on my house and my neighbor doesn't happen to like pink walls, I have no right to have my walls pink?"

"I suppose you could phrase it that way," he answered. "on the supposition that the court's decision is in his favor; but we do not think in exactly those terms. For us, having pink walls or not is not a matter of such importance that we would

consider it as falling under what I gather you mean by right—that if we did not have it, it would somehow be an injury. In the rare instances when someone does have such a strong attachment to something, it is only he who considers the matter so important, and the other party to the dispute tends to yield. Occasionally, two of the unfortunate people will be at loggerheads over some matter; but even then they tend to separate, since they know that anywhere else they will be allowed to have their own way.”

However things were managed, the aesthetics of the city certainly “worked.” It wasn’t like Paris or Washington, which had a kind of master plan that was built on; from a distance it had the randomness of a forest or of a city like New York; but as you swam into it, you were everywhere confronted with interesting and pleasing combinations of shapes and colors—and I mean everywhere, because of course there would be buildings and plants above and below you as well as on all sides—which changed in fascinating ways as you moved through them.

One of the features of some walls which we found rather disconcerting was that they were holograms. Either the center of the planet was an immense optical pump, making all the light that came from it coherent, more or less as in a laser or series of lasers of different colors acting simultaneously, or the people of Jupiter had devised a method of holography that did not need coherent light.

In any case, on passing down a narrow corridor, as you came abreast of a wall, it would suddenly disappear into a vast forest that stretched off to infinity, or a scene of animals frozen into immobility, or even a whole series of other buildings, in perfect

three dimensions which, as in holograms on earth, would change their relative orientations as you moved in front of the picture. It was quite easy to be fooled by such scenes—for us, at least—and was an extreme shock to be about to swim down a street and bump up against a solid wall. The inhabitants of the city either knew where these traps were, or the lack of any motion at all, or perhaps a somewhat greater darkness to the image than would be normal, made them aware of what was real and what was three-D imagery. At least, no one of us ever saw anyone from Jupiter make the kind of mistake that we constantly made.

That drawback aside, it was fascinating to stand off from one of these houses and be able to see perhaps two of its walls and the roof or floor, with the holographic wall opening up a space inside it that was far bigger than the house itself. It gave me the same sort of impression that I received when I looked at the old etchings by M. C. Escher, where he did tricks with perspective and made waterfalls that drove themselves, and people walking up the risers of staircases that others were walking down the treads of. The other fascinating thing was that these were all reflection holograms; the walls were actually solid and opaque, so that if you went into one of these buildings, the forest didn't exist, and there was just an ordinary wall.

Of course, there were holograms on inside walls, too—which might solve the problem, I suppose, if your neighbor liked pink walls and you hated them. You just made the wall which faced him solid with no opening, and stuck on (or however they did it) a hologram of a landscape, and as far as you were concerned inside the house, in that direction there was nothing but kilometers of open countryside. It certainly did eliminate the

cramped feeling I have had in apartments in New York; holographic photo murals would put psychiatrists out of business in large cities.

All I am telling here was, naturally, the result of later acquaintance with the city. Our first impression was one of speechless awe. It was so enormous, since it extended above and below as well as laterally; and it was breathtakingly beautiful, but in so foreign a way that it made the heart ache for home. I knew what the first Westerners who penetrated Japan must have felt like, that they had stepped into another world. In our case, this was literally true, and the sublimity of it drove home to my own mind how far, how terrifyingly far, from here was earth and the flora and fauna, the people and places I knew. There was even no sky here. I had gone down to Argentina once to visit my mother's relatives, and was non-plused to find that many of the stars in the night sky were unfamiliar. But there was simply nothing here at all that was anything like anything we had any experience of; and the loneliness of this among all the people that had come over to see us was so strong that I could feel it as something physical around me.

It wasn't that depressing feeling we had at the hydrogen desert that we'd first encountered; now our minds were filled with new things to learn and new people to meet. It was, I suppose, our disorientation at the total strangeness, however interested we might have been in exploring it.

"How long do you think we can stretch our stay here?" said Michele after a long silence.

"Well," I answered, "we should be able to make the food and water last a couple of months if we're careful. Oxygen's no

problem, of course; I haven't calculated it, but I'd guess there's enough in the first stage for ten years. To be on the safe side, let's shoot for a month, with a cushion in case we need it. I'll check with earth as soon as we get back into contact." We were now in one of the five-hour blackouts.

"Thank God for that asteroid or whatever it was that hit us!" she said. "I don't think I'm going to be spending much of my time inside here, except maybe to sleep and bring back specimens—if they let us have them."

"Yeah," said Mike. "Remember how the lunar astronauts were so proud of the rocks they brought back? And we have room enough up there" (he pointed to the first stage above us) "to bring back half the planet—and not just rocks this time. Who knows? We might even be able to persuade one of these clowns to come back with us."

"Don't be silly, Mike," she said. "they'd never want to come; and besides, any one of them that got in here would be an explosive mixture, with the hydrogen inside him. He'd probably die outside of hydrogen anyway."

"I thought you were the one who believes they never die. I was thinking we could stick 'em in the hydrogen tank on the third stage—we probably won't be using it. And I wouldn't be too sure they wouldn't like to come with us, at least for a while. After all, we came here."

"I don't know," she said.

Mike looked at her with a twinkle in his eye. "And, of course, if they can't be harmed against their will, then we've got no problem. If we decide to shanghai one of 'em and take him back home with us, he'll be none the worse for it."

"Of all the disgusting ideas I ever heard!"

“I knew that’d get to you!” he laughed.

It took a split second for her to realize that he had been setting her up all this time. “You rat!” she cried, looking for something to throw, when over the speaker came the St. Peter’s new composite voice, “We wish to bid you welcome to—” and he flashed into the intricate series of shapes that was the name for his city.

Thirteen

We had stopped perhaps half a kilometer outside the outermost building of the city. St. Peter suggested at this point that we ram the first stage into the wall of grass to our right to give us a kind of anchor; and though there was no perceptible current, we felt that he knew best. It took a bit of maneuvering, which created great plumes of fire in various directions, attracting a good deal of attention.

By the time we were firmly set in place, quite a crowd of people had gathered to look at us. They were all more or less the size of St. Peter and Cleopatra—about a meter in diameter—but of every color imaginable, including some of the black people that were infrared or ultraviolet to their companions.

It seemed that each person had his own characteristic color, which was recognizable by those who knew him the way we recognize the subtle differences in the shape of a face. In that respect, we were like white people who go to Africa or China and can't distinguish one person from another for a while. As we got to know people, we came to make fewer false identifications with others who nearly matched them.

Interestingly, one of the things that enabled us to distinguish

the people was that each one had a distinctive way of making the shapes that were the language—a sort of visual tone of voice. Since they used to talk to us in both English and their own language, both because they felt it more comfortable to do this and because they thought that eventually we would pick up some of it (which Michele began to do rather quickly), we at least got to know each of them better than we otherwise would if they had remained their polite egg in our presence.

St. Peter and Cleopatra were obviously giving a lecture to the crowd on the strange object and its inhabitants, because both of them were in front of the group, and both were talking at the same time at a furious rate, with several of their eyes on each other, several on us, and most directed toward the crowd, where one or another person would flash a question and would—we supposed—get his reply without interrupting the flow of the discourse.

The listeners seemed to have no trouble following both of the speakers at once, since the eyes of everyone in the group were divided among each of them and us; and occasionally one or a small group would come closer to have a good look at some part of the ship, while still keeping three or four eyes back on the speakers or at some questioner in the audience.

At one point, either St. Peter or Cleopatra said something funny, because they all spiraled backwards in a hearty laugh; and by accident, we found out what it dealt with, because someone telegraphed a question, and we heard St. Peter say over the speaker in the ship, “Hello, there!” at which they all laughed again.

“I wonder why they think it’s so funny how we talk?” said Michele.

“Obviously,” I answered, “they never thought of communicating by radio before.”

“I suppose you’re right,” she said.

They seemed to think it rather impolite to imitate St. Peter’s examination of the ship and swarm all over it without permission, because, though some came close, no one actually touched it, and they only looked in at us from a respectful distance, making sure that we had a view past them to the two speakers. “I think we’d better get into our space suits,” said Michele. “I imagine we’re going to have to go out in a minute and be introduced to all these people.”

“Do you think it’s safe for all of us to go out at once?” I asked.

“Sure,” answered Mike. “There’s enough of them out there to tear the whole ship apart if they had a mind to it; and we’d be a lot safer if we didn’t let on that we were afraid of what they’d do to us.”

“I was thinking more in terms of doing us some harm by accident, like what happened last time.”

Michele made deprecating noises, and this concern of mine had been anticipated by St. Peter, who at this moment was saying to us, “We would be exceptionally gratified if you would honor us by emerging from the confines of your vehicle. To alleviate any trepidation on your part consequent on the deplorable misadventure with Michele earlier, I have admonished them against physical contact.”

As he spoke, evidently saying the same thing in his own language, several of the members of the crowd looked as if they were about to make the backwards somersault, but had checked themselves out of courtesy.

“Thank you,” I said. “We are preparing ourselves now, and will be out shortly.” I found at this stage that when I was talking to these people, my speech became rather literary.

After we had emerged, which, as you will recall, took a bit of time, St. Peter led us a little way from the ship to where the others had gathered. “I find it difficult to distinguish you in that raiment,” he said, “and so I would appreciate it if you would yourselves pronounce your names.”

We did so, and then, one by one, the Jovians swam past us, paused, and each made the series of shapes that was his own name. One or two made awkward and touching attempts at saying our names, which caused a kind of shudder among those who were far enough back so that they were unlikely to be seen—something I took to be a Jovian giggle. Several became egg-shaped at this, especially if they were close to us—which I interpreted as embarrassment at the gauche behavior of their compatriots.

In general, the reception was extremely stylized and formal; and I must say the shapes that were the names of the people were in many cases quite breathtakingly beautiful; but it took a long, long time for everyone there to meet each of us.

When it was over, Michele said to St. Peter—who immediately began flashing into a series of shapes, as a kind of simultaneous translation—“Will you tell them that we thank them very much for their courtesy, and will they please forgive us if we don’t remember many of them later. Their names are just confusing to us, and anyway our memories are very bad, I’m afraid, in comparison with yours; we can’t learn things just by being exposed to them once the way you can.”

“We understand perfectly,” said St. Peter, and the others said

something more or less in unison, which was clearly agreement.

There followed an examination of the ship, which took another couple of hours. A few expressed a desire to go inside, and I explained through St. Peter that inside there was gas, not liquid, and that it was probably noxious to them. Cleopatra remarked, “Then that is the explanation of your emergence in those garments; you must be encapsulated in that gas in order to be comfortable—or is it essential for your survival?”

Michele immediately said we would die without it, something that gave me a twinge of misgiving. Granted that everyone at the moment seemed totally friendly and conscientious, it was still not too good an idea, I thought, to reveal to them how many different ways we could be killed. Of course, only St. Peter and Cleopatra could understand us at the moment, and they had already saved Michele’s life, so there was probably no real danger, but one never knew—and Cleopatra, for one, seemed very interested in the subject. But the damage, if any, had been done, and given their minds was permanent; so there was nothing to do but hope for the best now.

The crowd eventually dispersed, with only six or seven remaining. St. Peter said, “You have indulged our curiosity with exemplary patience; and now it is our honor and delight to be able to afford you a brief sight-seeing excursion to our own habitations.”

“That is very kind of you,” said Michele, “only you must not move too fast; it’s hard for us to swim in these suits.”

Fortunately, we were right next door to the most outlying of the buildings, and would be able to struggle over there without too much difficulty, though it was an exhausting chore to

move from place to place. Before we got more than a few meters, Mike said, “this is impossible. We can’t be fighting like this just to walk around; we’ll have to think of something to make it easy to move.”

Cleopatra heard him, and said, “If you could move as we do, taking in the liquid and forcing it out, you would find it exceedingly facile. It seems your vehicle is constructed on something of this principle; and so I take it that you are aware of it.”

“Yes, the principle’s clear enough,” said Mike, “but how could we manage it? I could probably put together a portable pump if I had the materials; but I don’t think there’s anything in the ship we could use, and all you have here is plastic. And what’d we use for energy?”

“I must introduce you to a friend of mine, who fortunately lives propinquously,” said Cleopatra. “His avocation is mechanical contrivances; and it may be that he could devise an instrument that would alleviate your difficulty and at the same time be commodious to carry.”

“I think I’ll skip the sight-seeing for now, then, if it’s all right with you,” said Mike, “if you could take me to him. We’ve got to solve this problem before we do anything else. You two can go with St. Peter.”

I wasn’t happy about Mike’s going off alone, but he was obviously right. Shortly before we left, we worked out a temporary “alleviation of the difficulty” by having the Jovians take our hands and lead us along. Cleopatra wrapped a sort of tentacle around Mike’s arm and vanished with him around a corner; and we went on either side of St. Peter, who spread himself into a kind of stingray and held each of us under our

armpits.

If the outsides of the buildings, with their curving walls, floors, and roofs, were odd to look at, the insides were even more strange. The first thing you discovered was that they weren't even buildings in our sense of the term. You didn't go in through a door, but into a space between the floor and a wall or between two walls. Most of the walls do not touch other walls, and so the space inside the building is not really enclosed, but defined more or less as we define the space inside a large room by room dividers. Everything is suspended from a central thread and by extender rods that keep the walls in certain positions relative to each other; they just hang there in space, as it were, creating a place, making an inside and an outside, and as a means of breaking up the light streaming from below into shafts and interesting patterns of brightness and shadow.

The basic wall-material, as I mentioned, was a kind of Styrofoam; but there were smaller pieces of different sorts of plastic with different textures and surfaces, used to accent different areas and reflect the light differently. The average thickness of a wall was about ten centimeters; but it could vary greatly, presumably for aesthetic reasons, since there was no structural reason for anything to be any particular size, shape, or density.

One of the more disconcerting aspects of being in a house was the floor, which was not, in the first place, one solid piece of material, but usually a number of different slabs, leaving all sorts of spaces for the light to come through. Nor were the slabs either flat or horizontal. In the first place, this was not necessary, since no one ever stood on them—everyone and

everything floated in this world—and secondly, it was not feasible, since if they had been flat and horizontal, the buildings would have been very dark, none having its own light.

There was no need of any artificial light, of course, since there never was any night on the planet. The small amount of light that the sun added to the surface was much less than the light that came from the hot center of the planet. If you looked up very carefully, you noticed a slight difference in the “sky” every five hours as the planet rotated; but it was not enough to give anyone a sense of a day as we know it.

But whenever I went into a building, all during my whole stay on Jupiter, I had that acrophobic dizziness I used to experience in the gallery of Music Hall in Cincinnati. I would swim over a gap in the floor and feel as if I were about to fall through; or I would be over a part of the floor that fell off at a forty-five degree angle and feel as if I were standing crookedly. It is amazing how disorienting not having something resembling solid ground under you can be, even if you can't sink any further than you happen to be at the moment. In a way, we were like the fish that swim in and out of the castles in an aquarium—except that even those rest on the bottom, and for us there was no bottom.

Speaking of fish swimming in and out, the Jovian animals (which of course were all fish) moved freely about the city as well as the countryside, and frequently were to be seen inside the houses. The dwellers inside did not seem bothered by these intrusions, and in fact there were some animals that had become house pets for some of the people, with that special kind of relationship we have, the animal coming to the house for food and caresses, like a child; but unlike our pets never

tied up or forced to stay home (as if there was any way to force an animal to remain in one of the houses which had so many openings). Most of the animals preferred to be unattached to anyone, however, and in fact did not seem to like it inside buildings. They were, I suppose, what could be called wild, though I never saw a wild animal that was savage, no matter how large they were. Larger animals would occasionally stray into the city; and once or twice I saw one the size of an elephant (or a small whale) be driven out of the city limits by the inhabitants, as we drive animals by making frightening movements and so on in front of them. They tended to knock walls out of place, I was told, and it was a nuisance if they got into the city.

If the houses were always open to animals (and to people too), this does not mean that the people had no privacy. In one sense, they had no real privacy from animals, but no one bothered with that. But inside any house were many recesses in which a person could be completely alone, away from the sight of anyone; and it was understood that no one ever went into another person's house except accompanied by that person.

Of course, this in turn meant that you couldn't visit someone unless you saw him outside, and you and he agreed to go to his house; the concept of going to a person's house and knocking on a door (or in this case a wall) to rouse him to the idea that you wanted to see him was totally outside their way of thinking.

"But suppose," said St. Peter, "that he was meditating or busy and your visit would be a disturbance."

"Well, when we're busy, we just refuse to answer."

"But in that case, what happens when the person who was

calling discovers that you were inside and did not acknowledge the knock?”

“Well, we assume that he realizes that we had something important to do.”

“I am sorry,” said St. Peter, “but I find that almost incomprehensible. I find it difficult to see how on the one hand a caller would be willing to disturb a person, who might be too polite to refuse to answer, and so have to give up what is engrossing him at the moment, and on the other hand, a person who is being called on would be willing to give the impression to a caller that there is something more important than receiving the visit from a friend. Wouldn’t it be far more sensible, if you wanted to meet someone, to meet him when you knew he was available to be met, and leave him alone when it might be that he has some other occupation that he can best perform alone? In that way, neither of you is put in a false position.”

“Of course. But if you had to wait until you ran into him by chance outside, then you might not see him for days or weeks—or years, for that matter.”

As I implied earlier, for the people on Jupiter, “day,” “week,” and “year” had only abstract significance, since there was, as I said, nothing obvious like light and darkness to mark the passage of time. They knew about a short time and a long time; but measurement of time had no practical significance for them. In this case, St. Peter couldn’t understand the problem; if you would meet the person eventually, then you would meet him sooner or later, and whatever it was you had in mind could be taken up then. Why insist on it’s being taken up in circumstances when it might be counterproductive?

“But of course, you can forget why you want to see someone if you have to wait half a lifetime to see him.”

“Ah, well, in that case,” he answered, “I can see your point. I suppose that would cast a different light on the matter.”

Which made me realize that things look very different if you never forget anything at all, and you have—or think you have—an infinite time ahead of you to get what you want done.

I did hope, however, that Mike wouldn't find the pump-maker at home today.

One of St. Peter's friends—a person we later called Wordsworth—happened to be outside a nearby house where he lived. He asked St. Peter if we would care to look inside.

The house was in one sense typical, with interior walls apparently suspended in space at various locations, and the floors and ceilings tipped and bowed in all sorts of crazy ways. The floor was sky-blue, as it happened, and the ceiling a rather dun color, while the walls were pale pinks and greens; it made me want to turn myself over and float upside down—especially since the ceiling pieces were almost horizontal, so as to reflect the light back.

Because of the color of the ceiling, the room had a warm, peaceful tone to it, and gave the impression of a quiet place to think in. There were various *objets d'art* either attached to walls or suspended by threads at strategic points; generally speaking, they were sorts of sculptures (in plastic, of course), which were abstract, rather flowing shapes that complemented the curves of the walls, or led the eye from one part of the room to another.

A couple of the walls were rough, almost like brick or stone,

used for contrast; and three of these enclosed an almost completely dark area which you entered from the top—and it really was dark, not one of those colors we couldn't see. Wordsworth used this, we found out, when he was contemplating something extremely difficult or profound.

He also had one wall which was a holographic mural of a Jovian forest, with animals peering out from between the plants. It was almost life size, and opened out that room (or rather area) into an eerie kind of vastness, because even from the glimpses I had so far had of the forests, there was movement in them, and everything here, naturally, was petrified, though in perfect three dimensions. Personally, I found it rather frightening, possibly because it looked so real to me that its immobility reminded me of death; but to the people on Jupiter, who were used to it as a picture and who had no experience of death, undoubtedly it did not have that negative overtone to it. In any case, it took your breath away, and was certainly lovely.

After we left, thanking Wordsworth profusely, Michele said to St. Peter that we found the place fascinating, but that we were extremely tired, and we thought we ought to go back to the ship and take a rest. She was expressing what was uppermost in my own mind.

“Ah, you do rest, as we also do,” he said. “Excellent. I will lead you to your ship at once.” He took us again under the armpits and sped off with us, darting around corners so that our feet swung in great arcs behind us, and we lay, as it were, on our backs and watched the buildings above fly by.

When we arrived at the ship, he said he would wait for us; and when we explained that it would be a rather long

time—finally getting him to understand the interval in terms of the delay-time he knew of between transmissions from earth—he said that it would not matter. He would rest himself, he said, beside the ship so that he could be there when we came out again.

We told him not to trouble, but he insisted that it was no trouble at all, that he had nothing else to do. In fact, he seemed surprised when we implied that there were things that people *had* to do in any meaningful sense. “One does as one pleases, does one not?” he said.

Once inside, Michele said, “You know where we are? We’re in Utopia.”

“I more or less got that impression,” I said.

“Shall we call it Utopia?” she asked.

“It sounds sort of inadequate,” I replied. “Thomas More’s Utopia was on earth, after all, and the people were happy, but they worked hard. Everybody here seems to be on a perpetual vacation.”

“Well, you’re the one who studied Greek. What’s a word that would do it justice?”

“Well, you know, Utopia really means ‘nowhere.’ Let’s see if we can manufacture something that’s not quite as unreal—how about ‘Acosmia’? The alpha privative, meaning not, and ‘cosmos’ for world; a place outside the world we know.”

“It has a ring to it,” she said. “I’ll buy it. Mike,” she added as he came into the cabin (we had heard him up in the first stage) “we’ve found a name for the place.” And she told him.

“Okay, if you want to be fancy. But I have something fancier; our Acosmian earthling-transporters.” He held up three small objects that looked like enlarged policemen’s whistles, about

the size of basketballs; one was red, one blue, and one green shiny plastic.

“Aren’t they neat? And they work like a charm. This little thing attaches to your belt, and they fit right under the oxygen pack. You can regulate the speed from somewhere under a kilometer an hour up to about twenty, which is plenty fast enough; and you can even change direction, just by doing this,” and he demonstrated. There was a deflecting nozzle activated by a turn of the shoulder.

“It’s a little tricky to work at first, but we’ll catch on quick. The three colors are so they can tell us apart, of course. Now what’s this about this name you thought up?”

We told him how we came to formulate the name from the fact that we thought we were in Utopia.

“Yeah, it sure looks like it, doesn’t it? But there’s a fly in the ointment somewhere; wait and see.”

Fourteen

"You know," said Mike, when we woke up from our rest, "I think it'd be a good idea if we split up, and each of us took some aspect of life here and concentrated on it. We're going to miss a lot anyway, but we'll learn three times as much if we're separated."

"That sounds almost intelligent," said Michele. "I think your stay among the Acosmians has already done you some good."

"Yeah? Well, I suppose it's because it's nice to have intelligent company for a change."

"Even funny-looking intelligent company?"

"Once you've been with 'em for a while, you forget they're funny-looking. They've got so much inside them that it only takes a couple of hours or so. Not," he added, looking at her knavishly, "anywhere near the time it takes to get used to some funny-looking things."

But Michele was up to it. "Of course," she said, "it must be a little harder for you than for us, because we've already become accustomed to foreign-looking objects."

Mike's face fell. "Yes," he said, "it must have been a burden. Well, anyway, I was going to tell you that I'll be spending my

time with the guy that made our jets. I call him Newton, by the way—naturally. I'll be studying the physics and chemistry they know here. You two can decide for yourselves what you're going to do with your time; but Newton told me that he'd expect me at any time, and so I'll be going."

"You asked for it, Mike," I said.

"I know I did. And I sure got it. I'm not complaining, I'm just going." And with that, he went into the little chamber where we had the space suits and got dressed. We didn't quite know what to say to each other, and sat there in silence, even after we heard the airlock close.

Finally, Michele said, "But then why does he bait me like that, if he can't take it? After all, *he* just got through calling *me* funny-looking and stupid to boot."

"Yes," I answered, "but it's obvious that you're neither one. But it's true that he's foreign-looking to us."

"Well so what? What difference does it make? I never gave it a minute's thought until just now; and the only reason I thought of it was because I had to say *something* to parry that remark of his."

"I know that, and so do you. But he doesn't. He can't. Just because he's Chinese, he always is in a position where he wonders whether people notice him as Chinese, or whether they think of him as a person who happens to be Chinese. The least remark you make that gives him grounds for believing that you have a prejudice against Chinese people is something he takes deep down as the way you 'really' feel about him, that's escaped finally in the context of a joke.

"There's nothing that can be done about it," I continued, "as long as there are people that are really prejudiced; I've

noticed this with some of my Black friends. As soon as you say anything that can be construed as prejudicial, they say, 'Ah, now the truth is really coming out,' precisely because there are people who use contexts like that as an excuse for saying what they really think. And you never know who's doing it and who isn't."

"But my heavens, Paul, we grew up with him around us! Can't he tell that the fact that he looks Chinese means no more to me than the fact that you've got brown eyes? I never once made the least remark about the way he looked until this minute, during all these years."

"Maybe it's the fact that you've avoided the subject that made him think it meant something for you."

"But I avoided the subject for the very reason you've been talking about! What am I supposed to do? If I keep quiet, then he thinks it's because I can't stand the Chinese and am busy 'tolerating' him in spite of what he is—and if I mention it, even as a joke, he takes it seriously, and thinks he's wormed the 'truth' out of me in spite of the way I've acted for years. And I suppose if I mentioned it casually, he'd think I was just showing off my lack of prejudice, so that I could say, 'Look at all the weird friends I have.' You're damned if you do and damned if you don't."

"I know. But that's apparently the way it is."

"But then why doesn't he act that way with you?"

"I don't know. I've been lucky, I guess; I haven't given him an opportunity yet."

"Well, I don't know what to do. I feel like telling him that I am what I am, and if he doesn't like me, it's too damn bad. After all, he's put me in the same position he thinks he's in,

with all his snide remarks about women astronauts. Who does he think he is? Just because he's Chinese, everybody has to kowtow to him, and he can ride roughshod over other people's feelings as long as he has a smile on his face? I *know* how he feels about me; and just because I can give as good as I get, it doesn't mean that it doesn't hurt sometimes. But I don't go brooding over it."

"Well, don't worry about it. He'll get over it; he always has, so far."

"The thing that kills me is that he's so likeable in so many ways, and I wouldn't deliberately hurt him for the world. But he keeps asking for it, and it's just my nature that if somebody sticks his chin out, I'll pop him one on it. I never thought it meant anything."

"Well, it's his problem, really, not yours. He knows what you are—or he ought to by now—and the whole thing is his fault, if he takes what you say seriously. You have nothing to apologize for, as I see it. And he as much as admitted that himself. And he has sense enough to realize what the truth really is. You'll see; he'll be back tomorrow as if nothing had happened."

"Well I hope so."

"But what are we going to do today?" I asked.

"Oh, I don't know. This kind of thing just ruins the day for me. Oh, well. I suppose he's right, that we should split up. But Mike can bury himself in physics if he wants to; I want to see the sights and meet the people and all that. Of course, I'd like to find out about the biology of the people and the plants and animals; but I don't want to spend all my time here at lectures."

“I tell you what. I’ll ask St. Peter to introduce you to a biologist here, if there is one, and maybe you can explain yourself to him. I’m sure he won’t mind taking you around; and if he does, then we can find someone else. I’ll go with St. Peter, and try to learn about the sociology here. It sounds as if it ought to be interesting. We know they have courts, for instance, and there’s at least something that could correspond to criminals—these ‘unfortunate people,’ whoever they are.”

“That sounds like a reasonable division of labor, as long as you don’t mind overlapping, in case I get interested in something myself.”

“Oh sure,” I said. “There’s no reason we shouldn’t ‘please ourselves,’ as St. Peter said.

So we went outside, and sure enough, St. Peter was there waiting for us. He gave us an Acosmian greeting, and smiled an Acosmian smile: a shape that looked like the top of an exclamation mark.

“I have not been idle in your absence,” he said. “First of all, the one Michael calls ‘Newton’ came and asked for your words, and I gave them to him.”

“All of them?”

“Well, we can speak a bit faster than your machine spoke to us, if we have to,” he said; “and he was rather anxious not to have an impediment between him and his understanding of Michael. In any case, I had hardly finished when your earth began to transmit a book you call the Bible. It seems rather unevenly written, if I may say so; but it has something, I think. In fact, I must confess that I had rather lower expectations of your writings; but I believe this one will repay some study.”

He smiled again. “I did learn one rather significant fact of

immediate relevance to me. And I might remark that if I have no keys, since we have no use for keys here, I trust I shall still be able to unlock for you something of this kingdom in your heavens.”

Both of us stood there staring at him, until it began to dawn on us that he had discovered his name—at which point I stammered, “I . . . well . . . ” He laughed.

“I presume you had no expectation that I would lock you out—or deny you.”

“It was just an impulse, you understand,” said Michele in confusion. “We never had the faintest idea you’d find out who we named you after.”

“But I am flattered! You could have named me after a dog or an amoeba. It will be fascinating to see who Cleopatra was named after.”

“Oh, good Lord!” I said, thinking of Shakespeare’s play, which they inevitably would listen to, now that earth was beaming literature up at us. “You mustn’t take these names we give seriously! We had to name you something.”

“Do not be alarmed; we understand,” he said. But both of us made a mental resolution to be extremely circumspect in picking names in the future.

I then explained to him that Michele was interested in biology, but that she would also like to see the city, and that we had decided to go our separate ways; and so . . .

“I understand,” he said. “Cleopatra would be overjoyed to take Michele. He is interested in biology. In fact, it was because of his interest that I brought him to see you.”

“Him?” said Michele.

“What, is Cleopatra a feminine name?” he asked. “Now I

must discover who she was.” And he laughed again.

“Do not be alarmed,” he remarked when he had unspiraled himself. “A feminine name will do for us just as well as a masculine one. We have no differentiation of sexes; we are all hermaphroditic. But I am curious. What prompted you to put a feminine name on him? You must forgive me if I call him ‘him’; he is, as it were, neuter to me, and I use the pronoun in that neutral sense.”

“Well,” I said, rather lamely, “We thought he might be your wife.”

“Ah, I see,” he replied. “Yes, it would be natural for you to think thus, I suppose. But as it happens, I have no wife, and neither does he, though we are very good friends. In fact we have spoken of it once; but no one has stopped changing recently, and so there has been no occasion for it.”

“I don’t understand,” said Michele.

“No, naturally you would not. Among us, being married is a serious undertaking, since it involves caring for the child until he reaches the period of making his decision on what he is to be; and this can occupy what would be the equivalent of many years, I would assume, among you.”

“We take caring for our children seriously too—and it does take a long time,” she said.

“Yes, but it must be very different among you. Your Solomon, for instance, had seven hundred wives; and so obviously you have a different motive for marrying from ours—or your population is in great need of expansion. In any case, caring for the children of seven hundred wives would be an undertaking that I would shudder to contemplate.”

“That was in very ancient times,” I said. “We marry only one

person now.”

“Still, I gather that you take it somewhat more lightly than we. And since our population is at its optimum, those who wish to marry wait until someone decides to stop changing, and then they marry.”

“What is it to stop changing?” said Michele.

“Let me first explain what our life is, since it is quite unlike yours. A child begins by discovering the many possibilities he has in life, and those which he is naturally more suited for and inclined towards.”

“That’s like our children.”

“Yes, I gathered that. Then at some point, he makes a decision as to which of these possibilities he will try to realize; and from that time on, he is no longer a child, but an adult, and he leaves his parents, who then are free from their marriage once again, though most continue to live together afterwards as friends.

“The young adult then develops himself until he has fully realized all of the possibilities he has decided upon; and when he has become completely himself, he stops developing, and passes into a state in which his whole life, from beginning to end, is eternally present to him.

“In this state, he can no longer be affected in any way by anyone around him—by anything, in fact—though he can still affect his surroundings. He is like what it seems your Jesus was like after his resurrection; or better, since only a few people see him afterwards, and only sporadically, more like Jesus seems to have been after his ascension.

“It is not quite the same, of course. But the point is that when a person has stopped changing, he ceases, in a sense, to

be a member of the community, and we have another child to replace him.”

“I see, I think,” I said. I really didn’t. “You make marrying a very rational kind of procedure. Among us, there is a very powerful emotion that induces people to marry.”

“Oh, it is emotional among us also,” he said. “Those who have married say that the sexual act is one of the most pleasurable acts that can be performed.”

“And you’re never tempted to marry just for the sake of the pleasure?”

“I don’t understand. Of course we are. That is one of the main reasons we marry. The child is a responsibility we accept as a result of it, not the reason, in a sense, for our marrying. How can one ‘want’ something which does not exist, and will have characteristics one cannot predict beforehand?”

“I meant, aren’t you tempted to marry without rationally calculating that there happens to be a need of another child, and so on?”

“Ah, you mean *simply* for the pleasure. Well, no. If the act produces a child, one must take that into account as well as the pleasure, must one not?”

“One should, I admit,” I said. “But among us, the emotion is strong enough so that it often outweighs rational considerations.”

“You mean, your emotions outweigh your reason? Ah, then much of your Bible becomes clear—I suppose the ‘law in my members’ your Paul talks about is actually emotions, then. You see, I am learning. But this is very interesting. For us, emotions are a reason for doing something, but only one reason; and if the act does not seem good for other reasons, then the

emotion disappears—that is, it does not vanish, exactly, but it does not insist, so to speak, against other reasons.”

“You really are a blessed people, then,” said Michele. “The way we are, it seems that all we need is for us to discover that an act is not good for us, and our emotions insist and insist on that very act; and we have to struggle with them—and sometimes—too often—they win.”

“Life is very strange indeed,” said St. Peter. “You are much to be pitied, if that is the case. I do not know what I would do if I had to fight with my own mind about what I should do—I cannot conceive what it would be like. You must have much more courage than I can imagine myself to have.”

“Well, there isn’t much we can do about it.”

“No, but the fact that against strong promptings of your emotions you can ever do the reasonable thing is a rather amazing feat. Not to mention that one and the same mind can be at war with itself. It is very puzzling; extremely so. I take your word that it happens—as your Bible clearly confirms—but to me it does not make sense.”

“It doesn’t make a great deal of sense to us either,” she said.

“But it’s not all fighting against yourself,” I remarked. “We have our times of happiness—a lot of them, in fact.”

“Yes, I can see from what I read also that you have some helps, apparently, that we do not have, because we have no need of them. It is just that from my point of view a life like yours seems so unnatural that it is almost inconceivable. It simply demonstrates how little we know of reality.

“But we must not spend all our time here in discussion; you will be wanting to learn things. Let us try out your new jet-propulsion and see if we can find Cleopatra. Michael seemed

able to use his without difficulty.”

We started out, and found that the jets worked beautifully. As we wound our way among the buildings of the city, St. Peter said, “Incidentally, I asked Michael if he would, together with Newton, devise an instrument analogous to ours for recording our speech into books. Ours will work visually; but since the sounds you produce are basically of the same nature (he was, of course referring to the radio waves), then there should be no trouble modifying it so that it can reproduce them. In that way, we will have your literature at our disposal in both languages, and I am sure that there will be several people besides me who will be interested in hearing and recording it, so that I will be able to devote myself to you, Paul, while you are here.”

“That would be very nice,” I said, “and it’s extremely kind of you.”

“Not at all,” he answered. “I find I can learn as much from you as from your literature. But here we are. This is what I suppose you would call a ‘club’; it is a place outside our homes where we meet socially; and Cleopatra is frequently here.”

We went in, and in the huge room were several sets of people, talking among themselves. A few were alone in various niches, floating in front of what looked like television sets, but turned out to be books. You inserted a coin about the size of a half-dollar into them; on the coin (which was, of course, plastic) was somehow encoded the entire book, which consisted of anywhere from three to eight hours reading, depending on how fast you ran the machine. A hologram of a generalized kind of reader—not a real person, but a kind of diagram of one, for clarity’s sake, apparently—appeared inside

the box, and he went through the series of shapes of what was recorded on the little poker-chip.

We excited considerable interest in the club, and many stopped to ask what we were, and were answered by St. Peter; and we suffered a repetition of what we had gone through out at the ship. The first week or two of our stay had these moments scattered through it, everywhere we went, until the news of our arrival had filtered through the population. The people of Acosmia were a people, as St. Peter said, "of great curiosity," but they did not seem in any great hurry to learn; everything would come in its proper time, and there was no need to rush things.

One of the things that St. Peter did in the club was to create a coin or letter of introduction for us, which had on it what we were, how we spoke, and a kind of basic dictionary of our language. He explained what he had in mind, and asked us to excuse him as he went before one of the book-machines and spoke to it in his Acosmian language of shapes. It only took him about ten minutes.

"This will have to do for now," he said, as he handed Michele a coin and gave me two. "It does not have your sounds recorded on it as yet, because our books are not yet prepared to produce them; but it will at least acquaint those who meet you with information as to your nature and tell them where to go to discover more. It will alleviate the difficulty of your trying to explain yourselves over and over again. I will seek out Newton when you are in the ship during your rest period, and together we will produce something more satisfactory."

Cleopatra, we then discovered, was not there, but had in fact

gone to the ship looking for us, as St. So we retraced our steps, and Michele finally went away with her biologist with the feminine name, and I began my own education under St. Peter's tutelage about this fascinating and beautiful people.

Fifteen

The next couple of weeks, before we got at all used to Acosmian life, were a time of some confusion and much activity. We spent periods of five hours away from the ship, partly because our oxygen tanks were only good for six hours or so before needing refills, and partly because we wanted to be back at the ship during the five-hour period when we could communicate with earth.

We ourselves spent these in-ship periods either sleeping, eating, or classifying specimens that we had brought in, making reports, and in general keeping things up to date. Our Acosmian friends spent the time either resting or listening to one or more of the five different radio channels that were hooked directly to separate channels from earth, and were now beaming literature, philosophy, science, history, sociology, biology, and I don't know what else up to Jupiter to feed the voracious appetite of the inhabitants. Jonathan had worked out a scheme in conjunction with Georgetown University and the Printing House for the Blind (the Talking Books) to get as much information as possible about earth into as short as possible a time.

Mike and Newton had quickly worked out a recording device that would automatically take down what was being transmitted from earth, and by the second week had almost perfected a translator that went from the English radio signal directly into Acosmian, thus freeing some inhabitant from the tedious necessity of actually reading our books into their language. The languages were so different, however, in their structure that there were numerous instances of apparently hilarious solecisms, which Wordsworth, for one, found a source of immense amusement, and which he never ceased twitting Newton for.

There seemed always to be ten or a dozen Acosmians around the ship when transmission was in progress, because they would rather hear it live than wait for the coins that would reproduce it for them. They were not always the same group, but a few (like St. Peter and Cleopatra and Wordsworth) seemed to take as much interest in us and our ways as we did in theirs, and were always around—and I must say, at our service.

I had told Michele that Mike would be back as if nothing had happened; but it turned out that the old relation between them of squabbling at every opportunity was a thing of the past, even when they were together, which was increasingly seldom. I couldn't tell whether this was because of the remark that she made, or whether it was a simple occasion for him to reinforce his prejudice against women and he now was seizing the opportunity presented for being away from her. Our schedules were such that we didn't all sleep at the same time, in case there might be a transmission from earth; and even when two were awake in the ship together, we were usually doing different things, such as classifying specimens or typing our own reports to earth—which put us in different places.

There was plenty of opportunity to talk together, but there was just as much to be doing something private; and Mike was always, it seemed, in the latter condition whenever Michele was awake.

It bothered both Michele and me, but we didn't know what to do about it, and so we tried to put it out of our minds. And it was anything but hard to do this, since there was so much that was fascinating to learn.

I had, as I mentioned, decided that I would find out about the social organization of Acosmia, and discovered almost immediately that I had an extremely simple task; there was practically no social organization.

First of all, there was no fire department, because there was no fire. The Acosmians "cooked" their food by a chemical process, when they did anything with it at all. They ate only plants, which grew more or less wild at the far side of the city from us, and which they picked on little excursions at intervals of what would correspond to about two earth-weeks or so. As they gathered the plants for their meals, they kept the roots, and shaped themselves into baskets to bring them back to the house. They then "replanted" the plants not in immediate use in shelves or on the underside of the porches outside the house, where they would keep for the equivalent of a couple of months, it seemed. Evidently, these ledges were not like the mats on the surface that the plants grew on, and served more or less like our vases rather than small garden plots. Those people who were below the surface and had permanent plants growing on or beside (or beneath) their houses had a good deal of tending to do, carrying surface-matting down to replace what was used up.

In any case, when they prepared food, they put the plants on a kind of table and mixed them with various liquids and pastes, which they kept in spheres which could be squeezed to exude the proper amount—rather like our plastic bottles, but without any definite opening that I was able to detect. They seemed to know where the liquid or the paste would come out, however, even though, as far as I could see, it was not in the same place every time; evidently it had some relation to where the pressure was applied.

This application of chemicals changed the color and texture of the plants, made some into a kind of mush, and stiffened others. They then formed the mass (if it hadn't retained its leafy form) into some kind of artistic shape; and if the Acosmian was single, as most were, he took it outside onto his little porch (it turned out that every house had something like a porch or an eating-opening, at least) and began consuming it.

As others swam by, they might join him and take a few bites (i.e. slide a few bits into themselves somewhere—they had no definite mouth) and engage in conversation. I gathered that not only the appearances of the various dishes (or parts of the meal laid out on the porch) were artistically arranged, but that the parts were intended to be eaten in a certain order, which was often discussed at great length before the dinner, since the arrangement of the tastes was considered to be an art form also—a kind of symphony of savors, which in some cases seemed to be quite complex and refined.

St. Peter told me that eating was really not just something to stay healthy, but was indeed an art, and a dinner was always to some extent a public performance to a select audience. “The emotional overtones of the tastes,” he said, “are connected

with the actual savors themselves, and are arranged so that repetitions and variations evoke meaningful relationships, more or less as the emotional overtones of words and sounds do in poetry.” I didn’t understand it, and of course couldn’t experience it for myself to discover what he meant.

But to return to my point, there was no fire department. It is difficult to write about these people without being led off the track. Nor was there a sanitation department, because when there was any waste, the people simply pierced the gaseous cells of the material (which kept it suspended at the level they found convenient) and it became heavy and sank down to the incinerator conveniently below them at the center of the planet. There would be an occasional sweeping necessary on the tops of horizontal surfaces, but since these were not many, and were bathed by a gentle wash of the ocean anyway, this could hardly be called an arduous task.

They had no police force either, since it was either true that no one could do harm to anyone unwilling to be harmed, or because they believed this so thoroughly that no one ever tried.

“But *are* there people who try to be harmed?” I asked. “You mentioned something about ‘unfortunate people’ once.”

“There are a few unfortunate ones, yes,” said St. Peter. They either seek forbidden knowledge, like the knowledge of what is beyond the wall, or power over others. But the only power any person can have over another—here, at least—is the power of persuasion; and we are not easily persuaded that there is anything to be gained by learning forbidden knowledge. There is so much else to be learned that is permitted.”

“Is there much that’s forbidden to know?” I asked, thinking that I might be bringing up a delicate topic.

“Very little,” was all he said.

“We keep our children away from the unfortunate people, of course,” he continued as a kind of afterthought, “since they are able to be influenced, and we want them preserved from harm. But in most cases, the unfortunate people keep themselves away from us after a while. They try at the beginning of their—how should one say it? Sin, I suppose—to convince us that there is much in what is forbidden that we ought to know; but no one listens to them; and since they become obsessed with the forbidden subjects and we are not interested, they drift off by themselves.

“We all pity them, and some have tried to persuade them to change their course in life before they stop changing; but though we think that it is theoretically possible to accomplish this, I know of no instance where it actually happened. Actually, very few of them ever have stopped changing; they never achieve their goals, of course—or I don’t know whether it is ‘of course’ or not, but they never seem to—and they seem to doubt whether we stop changing or actually die, like the animals, so they have no reason to make the attempt. They wander about among us sadly, for age after age, always seeking what apparently can never be found.”

I was silent for a while. Then I said, “I wonder if the literature from earth will influence any of you to become unfortunate. There’s so much glorification of evil in it.”

“I think you need have no qualms on that score,” he answered. “We realize that you are half unfortunate and half more blessed than we, in some ways, and that you are often prey to very strong emotions. With us, there is no inducement to do what is forbidden; it has no prior interest for us, if I may

so put it. We must make a deliberate, calculated decision before we could violate a prohibition.”

“Yes, but your children might be influenced by tales of heroic rebels on earth, for instance.”

“And see that the rebels produced significant good results, and that the same might apply here? I had not thought in just those terms; there might be a good deal in what you say. You see; even though you chafe constantly under the realization that you are a lower form of intelligence than we—Oh, yes, you do,” he smiled, seeing my reaction—“It is one of the characteristics you have that endears us to you, and is nothing at all to be ashamed of. Still, you have a fresh point of view which can teach us a great deal—which already has taught us much. And you are not all that unintelligent.”

“It’s kind of you to say so,” was all I could think of to say.

“Do not belittle yourselves,” he said. “Some of your philosophers, such as Immanuel Kant or Georg Hegel, have written remarkable treatises, for all their obvious faults; they have much that will repay close examination and study. And I have already mentioned the Bible; and some other writings, such as those by John of the Cross, are exceedingly profound, though in a quite different way. And artists such as William Shakespeare and Charles Dickens have one or two works that are second to very little that we ourselves have produced.

“But,” he added, “I think you really have a point, and perhaps we should take this up with Caesar.”

Caesar was the elected ruler of the whole of Acosmia (that is, of the city we were in; there were others, scattered through the Red Spot, but so distant that we never visited them). We had been taken to see him early on, and of course gave him this

name. He was a rather smaller than normal person, of a light green complexion, and, from what I could gather, a person of as much leisure as anyone else.

We found him in one of the clubs, chatting with a few companions, and St. Peter explained to him that there might be a problem with the children's getting hold of the earth's books "before they made their decision."

"You have read many of the books," he said. "Do you think it would be wise to forbid them?"

"I myself see no pressing danger," he said (in Acosmian, of course, but they always translated simultaneously when we were present), "but it is a new influence, and Paul seems to think that it might be harmful."

"Do you?" he asked me.

"Well, your Majesty, I don't know much about you people," I answered. "With us, the very fact that they would be forbidden would be a challenge to the children to try to get hold of them and read them. But I think it is true that there might be a few things in them that would influence your children in a wrong way; and I'd hate to see us corrupt your peaceful kingdom, the way we seem to corrupt everything we come in contact with."

He smiled his exclamation mark. "We give very little thought to being corrupted; but it may be that we are somewhat over-complacent. As long as one is still changing, it is always theoretically possible to be corrupted; and perhaps you are right, that children should be protected from the occasion of it before they are fully capable of making responsible decisions.

"Let me see . . . There are two hundred and two families with children living among us now. I think I will visit them and

explain the situation, and each can take what action they see best. Thank you for your kind attention to us.” And after a few more remarks, he left.

“Doesn’t he send someone else on errands like that?” I asked.

“No,” replied St. Peter. “It is for errands such as that that he is our ruler.”

“Is that all he does?”

“Well, occasionally, he is called upon to settle a dispute we might have. It sometimes happens that two people have equally valid reasons for wanting to do something or for not having it done, and neither of them wishes to yield to the other. They then bring the matter before him, and he acts as the judge to decide the question in favor of one or the other.”

“Oh, he’s the ‘court’ you talked about once. But if the reasons on each side are equally valid, how does he make his decision?”

“I do not understand . . . Oh, I see. I suppose you would say his decision is arbitrary.”

“Then what?”

“Then the issue is settled.”

“You mean the party the judgment goes against just accepts it?”

“Of course. The matter has to be decided somehow, and neither has any better reason than the other.”

“You’re an amazing people. If that happened on earth, the one who had to give up his right would be furious, and would fight—just *because* he had as good a case as the party that won.”

“Then you must have a good many unresolvable disputes on

earth.”

“Well, we do. But we love our rights.”

“And a good many ‘fights,’ as you call them. You mean actual physical violence? Harm to others?”

“Yes, I’m sorry to say.”

“This makes many of your writings clear, then. We love our ‘rights’ also, I think I could say; but we are not so attached to them that it would give us satisfaction to have them at the expense of tranquillity. In general, it gives us greater pleasure to yield what we have to another who wants it than to keep it for ourselves. I do not wish to make a virtue of this; it is, for us, just something natural and satisfying.”

“We often feel the same way,” I said. “We just don’t carry it to an extreme.”

He laughed his spiral. “From our point of view, it is your attitude that is the extreme one.”

“Well, we believe that there’s always a way out so that no one has to have his rights violated.”

“Surely,” he answered, “this cannot always be the case. Even among us, it is not. Suppose, for instance, that a person owns a house or some land and moves away for a long time, without giving up his claim. Suppose some unsuspecting person moves into the house, thinking it abandoned, and raises a family there. His children inherit the house. Then the original owner’s descendants, having been willed that same house, claim it. Each owns the same house by inheritance; and in that sense, each has as much right as the other. How could such a dispute be settled without one party’s right having to be given up?”

I thought for a while, and said, “I suppose that you’d have to say that the people that moved in didn’t really have a right

to the house—or maybe that the people who moved away actually abandoned it and lost the right.”

“Exactly. Each descendant’s claim is as tenuous as the other’s; and therefore as strong. I could construct any number of such situations, and from your writings, I am sure that they are far from unrealistic, especially where nations are disputing over territory. To pretend that everyone’s rights can be upheld in situations like this is, forgive me, a chimera and an impossible dream—at least as I see it.”

“Well, it does seem to be true that things like this lead to wars for generations. I don’t know the answer. But I still don’t see how you can expect a person or a nation to just give up its rights if somebody else doesn’t have any better claim.”

“From our point of view, we find no reason for *not* giving up what you call our rights if we have no *better* claim than the other person. But I suppose that is easier for us because each of us knows he will be able to achieve all his goals eventually anyway. In your case, giving up a right might mean never having something you had set your heart on—at least never having it before you die, if your life somehow goes on after death, as some among you seem to think.”

“I suppose it’s one of those conundrums that no one will ever find a satisfactory answer to,” I said.

When I got back to the ship, it was Mike who was awake. “You want to know something?” I said. “It seems the whole of earth’s literature has been put into the Acosmian equivalent of an adult bookstore!”

“Yeah?” he said, not really hearing. “Listen, Paul, I’ve finally figured out how these guys can do physics with no clocks and

no rulers. Newton was measuring changes in terms of energy-drops and not time, and coming up with something that looked like our results, and I tried plugging his figures into our equations. First of all, they measure distance by energy-levels in a field, and not the way we do; and then the change is with respect to this energy-distance, and not with respect to time. I found out that if you solve the time derivatives of velocity and acceleration (they know both of these) for time and set them equal to each other, you come out with acceleration as a function of velocity and distance, which you can plug into Newton's (I mean Isaac Newton's) force equations and get the same results without using the time. I haven't worked out how this distance relates to the distance the way they measure it, but I can see that it's possible. It looks like this might be a more powerful way of going about physics.

"Now, what were you saying about adult bookstores?"

I explained about the unfortunate people and how Caesar was going to warn parents to keep their kids away from our writings, and Mike said, "So they have 'unfortunate people,' do they? I knew everything was too perfect to be perfect. And the unfortunate people are the ones that are trying to get forbidden knowledge. Did he tell you what knowledge was forbidden?"

"I gave him a chance to, but he dropped the subject, and so I didn't press it."

"I wonder what it is."

"Now don't go getting ideas, Mike."

"What ideas? I'm curious, that's all. I think I'll ask Newton about it tomorrow."

This bothered me for a few minutes, and I didn't reply. Then

I thought that, after all, Newton would either tell him, in which case I had misinterpreted St. Peter; or he wouldn't, in which case what was the problem?

But something really did bother me the next day, when both Mike and Michele were asleep and I was at the laser receiver. Jonathan knew I was the only one awake, and he told me that he was going to print his message on the screen so that his voice wouldn't disturb anyone. I knew right then that this was another one of those messages about Janice.

What I read was this:

"No reply at the moment is necessary. We've been checking into Janice Jones's contacts. It seems that before she got the job, she knew some people who have links to China.

"We've also been checking into what happened to the first stage of the rocket, and found that a blow from an asteroid couldn't have caused the particular damage you reported; it had to have been an explosion.

"It turns out that Janice had met the person who inspected the first stage, and who was there for the final inspection before the launch. Everything is consistent with his sticking a piece of plastic explosive to that place on the skin, which would blow up when heated.

"It didn't work until you got out where you were, we speculate, because you didn't accelerate until you were above the atmosphere, and so there was no friction, and we've discovered that that side of the ship was not exposed to the sun until just that point in the voyage.

"We can't prove anything, of course, but it looks like Janice isn't quite the innocent she seemed to be. Keith Jackson is pestering me to find out when Mike met her and how and so

on. I have as much trust in him as you do, Paul, but I'm curious myself.

“But the main reason I'm sending this up is that Janice was checking components. It may be that there's some other kind of booby trap in the ship. Somehow, our records of just what she checked aren't clear. See if Mike can remember what she worked on. I don't want to make you too nervous, Paul, but it could be serious. Discuss it with Michele.”

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I couldn't decide whether to tell Michele about this new development or not, since she had enough trouble with Mike already, and there was no sense adding to it. In any case, if anyone were to try to wheedle out of Mike what his relationship had been with Janice, Michele would be the last person who ought to try—and given the kind of person she was, she might just jump in and ask, which would mess up everything if there was actually anything there to mess up.

I couldn't figure out a way to do any probing myself, unless I could somehow steer the conversation in a direction that allowed for a casual mention of Janice; but with Mike's being as stand-offish (even with me, now, for some reason) as he was, the likelihood that he'd get into a confiding mood was slimmer than ever. He apparently had Newton to tell his troubles to, just as I had St. Peter and Michele had Cleopatra.

As to the problem of Janice's leaving us a little present of some explosive somewhere, it worried me a good deal; but if it hadn't blown up by now, when we'd already extended our stay three weeks beyond what anyone could have figured would be our farthest limits, then it was in a position where it wasn't

going to blow up. There was no sense getting the other two people into a tizzy because of it, and possibly wasting our time tearing the ship apart looking for something that wasn't there. Maybe Janice was just a dupe of these people, who thought she might be useful and found out she wasn't.

As soon as I got back outside, St. Peter noticed that I was preoccupied, and asked me about it; but I told him that it was basically just a personal matter.

"It has nothing to do with any difficulty we have brought upon you, I hope," he said.

"Oh, no!" I hastened to assure him. "It's connected with earth."

"I am sorry to hear it, both for your sake and ours," he replied. "It would be a great pleasure for me to assist you in alleviating any distress you might have. If ever I can help you in any way, please ask. Forgive me for stressing this, but please do; I don't want to add to your discomfort by alluding to the subject again, but I want to give you my assurance that we are ready and even eager to do whatever we can for you; and we might even be able to assist you in ways you might not realize."

"I'm sure of it, and if there's ever something I think you could help me on, I will ask. I really will."

"I'll be in a better position to help, of course, after I stop changing; though at the moment, I don't plan to do that for some time yet. Still, one can never tell. But you and I have become good friends, Paul; and since our condition is so different from yours, I'd like to tell you now, to prepare you for it, that if I stop changing and you are still alive, I can help you even on earth, or wherever you are. You see, after we stop

changing, the whole lives of all our friends are eternally present to us; and though they cannot affect us, we can affect them; and our eternal gesture for their benefit appears to them at the proper time. It often occurs that at these moments, we appear to the people we are helping—though no one else can see us, of course.”

I was dumbfounded by this revelation. “You mean,” I said, “that I might be down there on earth twenty years from now, and suddenly see you floating in the air somewhere, giving me advice?” I pictured myself walking down the street with a couple of friends and saying, “Pardon me, there’s a friend of mine from Jupiter over there, and he’d like to say a few words to me.”

“Do not be alarmed,” he said. “I will be circumspect if it happens. I am happy now that I told you, since it might startle you if you had had no warning.”

“It certainly would have!” I said.

“Well, as I mentioned, the likelihood that I will stop changing before you die is rather slight. In any case, if what I seem to gather from some of your religious and philosophical treatises is true, then after you die, you and I will be together again eternally, as well as with all the rest of our friends. I find that very gratifying to contemplate.”

“Well, I hope you’re right,” I answered. Even after so short a time—a matter of three and a half weeks—I was already beginning to look on parting with St. Peter and three or four of the other Acosmians with a good deal of regret. And we were already beyond half of our stay.

“Perhaps I can do something for you now,” said St. Peter, musingly. “I would like to show you our church.”

“You have a church?”

“Certainly. It is a building which, inside, has an atmosphere conducive to calmness of spirit, I think. We generally go there, in fact, when we decide to stop changing; it has a special room for that purpose; and the ambiance of the place tends to assuage any pains our friends might have because of our temporary separation from them.”

“Do you worship in it?”

“Of course. That is its main function. We do not call the One we worship ‘God,’ of course; our name for him is”—and he made a series of shapes—“which roughly might translate into ‘Our Awesome Friend.’ Often we go there singly; but frequently also in groups; and on rare occasions, it is said, there is a call for everyone in the city to convene there. This has never happened in my lifetime, however, nor in the memory of anyone I know.”

“It must be an immense building, then,” I said, thinking of all the people there were in the city.

“It is our largest.”

“Oh, you mean that huge stadium-like thing in the very middle of that beautiful courtyard by Cicero’s house? The one that’s the only building on its trunk?”

“Yes, that is the one.”

“I was wondering what it was, and why you never mentioned it.”

“Well, of course, it is sacred to us, and we do not like to show it simply as a curiosity; we have the attitude that someone ought to be properly disposed before he enters it, since, though in a sense our Awesome Friend is anywhere or everywhere, still in that place we relate ourselves most closely to

Him. But I think your disposition is such that it might do you good to spend some time inside it.”

“I’d be very grateful if you’d show me. I think you’re right,” I answered. I was worried, and not even sure if I had anything to be worried about, really. What I really needed was a meditative place to find peace of soul, so that I could think rationally again.

We wound about the streets, and came without much delay to the place. It was essentially a huge dome, rather like an Acosmian ceiling, but curving down parabolically to the level of the floor, which was more or less flat and horizontal—a circle which did not meet the walls, but left a rim wide enough for three people to pass abreast easily between the floor and the wall.

Once inside, I found that the floor was not really flat, but curved down toward the middle, so that the impression you got was rather like being inside an immense egg.

Like all churches, it made one want to talk in hushed tones. Floating about inside were fifteen or twenty Acosmians, obviously intent upon their prayer. Strangely, the inside of the building was even brighter than the outside; and this gave me an even greater sense of awe than I have ever experienced because of the dimness of the churches on earth.

There seemed to be a chamber at the very top, almost enclosed, but with an opening from which streamed a blinding white light. “That is the room we enter when we stop changing,” said St. Peter. It was the only artificially lighted place in all of Acosmia, to my knowledge.

But the light inside the church proper was not white. There was white light fanning out from the room above; but there

were other areas of the building where one found oneself in deep ultramarine, or brilliant scarlet, or green, or yellow; and I discovered that this effect was due to prisms set in the floor in a pattern that was the first syllable of the name of the Awesome Friend in Acosmian. This also was unique on Jupiter; nowhere else did I ever see anything transparent.

We spent almost an hour there, not saying a word, each lost in his own thoughts; and when I came out, I felt relieved, even though nothing had actually been resolved. Emerging, I asked about the prisms.

“Yes, they are beautiful, are they not?” said St. Peter. “Many generations ago, a famous chemist discovered how to make a transparent material. At that time, we were reconstructing the church, and he made those prisms with his material, which we then set in the floor. They seemed so appropriate that we decided that the material should be used only for that purpose, and so he destroyed the formula.”

It was getting late, and I thanked St. Peter for bringing me to the church, and turned to go back home to the ship. When I got there, Michele, who was the other one not sleeping during this period, was obviously bursting with something she had found out.

“No, not now,” she answered the look on my face, “because I want Mike to hear it too when he wakes up. Anyway, he has to hear it, because it involves an invitation.”

She permitted herself meanwhile to listen to my description of the church, and of the strange implications involved in the state the Acosmians get into after they stop changing. She showed interest, and made the proper noises at the proper

times, but all the while she had a little grin on her face; and while I was typing my report to earth, she indulged in a private giggle or two over the cards she was jotting notes on. I am often tempted to read that report I made; I am willing to bet it bears very little relation to what happened to me during the period, and it probably has some interesting variations on the English language.

Finally, we heard Mike moving above us, evidently going directly to get into his space suit and let himself out. “Mike!” she called. “Before you go, could you come down here a minute? I have some information that might be useful in new situations.”

“What’s this all about?” he said as he emerged from the now-always-open hatch of the space craft. I had expected him to be surly, but he just seemed interested.

“I bet I know at least one thing that’s on that little coin St. Peter gave us for introducing ourselves to the people we meet; and I know why they think the way we talk is so funny.”

“Why is it?”

“You’ll have to let me lead up to this to get the beauty of it. Cleopatra asked me this morning if I’d mind taking a day off and going to a poetry recital with him. I said, ‘Of course! I’d be delighted to go.’ It was my first real date with an Acosmian, come to think of it.

“Anyway, right after I’d accepted, he got all apologetic, the way he does, and said that I might be bored, because I wouldn’t be able to understand it; but Wordsworth—he’s the one St. Peter showed us the house of that day, Paul—was a friend of his, and he rather rarely did such things, but he had an experiment in mind, and he’d like one of us to see a real

Acosmian poetry reading first, just to get a first impression—and so on and so on, until I finally told him that I was really interested in going anyway, and it would be a relief to get away from biology for a while; and in the end I convinced him that I'd rather do it than anything else in the world, and he agreed to take me.

“Well anyway, just before we went into the little hall down the street—the one below Caesar’s club, you know—he took me aside, and said, very politely, would I mind very much if we didn’t talk when we were inside.

“Of course I said I wouldn’t, thinking that he didn’t want me to talk so he wouldn’t be distracted; but he went all shapeless with relief, so I could see that there was something more to it. So I asked why he wanted me to be quiet, and he immediately got all embarrassed and speechless, and turned himself into an egg the way they do; and at first he wouldn’t tell me anything at all, which made me more curious than ever.

“Finally, I told him that it seemed to me that there was something bad about what I was doing, and maybe I’d better not go in at all, and I’d let you people know that we were all supposed to keep silence whenever Acosmians had something important to say to each other, and he said, ‘Oh, no! That is not it at all! Not at all! No—’ these are his exact words ‘—it is just that, well, there will be some people there who have not met any of you, and if they should suddenly hear you speaking without being prepared for it, it might spoil the effect of the poetry for them.’

“Then it occurred to me that every time someone heard us talking for the first time they thought it was funny, and so I asked him about it, and he got embarrassed again, and finally

said, ‘Well, you see, we had never heard anyone speak in that way before, and in our culture, the noise you make is something we do that is not considered very polite. There is nothing evil or wrong about it, you understand, and there are other cultures which consider it not improper; but we were always brought up to think of it as—well, vulgar. And then to hear it used as a language, of course, amuses us at first. It is a silly prejudice; but we have it, and if a person is not prepared, he might take it wrongly, especially at a poetry recital.’

“So naturally I asked when they make these vulgar noises that we use for speech, and he hemmed and hawed and then said, ‘It is a sound that we tend to make naturally after eating, especially if we have eaten overmuch.’”

Mike whooped and roared, and said, “You mean we talk by burping? Or farting, maybe! I suppose with them a burp and a fart would be the same thing. Fart me a play of Shakespeare, will you Paul?” He collapsed into hysterical laughter.

And then I thought of St. Peter, solemnly floating outside our ship, listening intently to *Hamlet* being played from earth on our fart-machine. It was too much.

It was several minutes before any of us could do anything but scream for help at how sore our sides were. We were all somewhat tense, I suppose, which added to the helplessness of the laughing fit.

Finally, after we had more or less subsided into groans and sobs, Michele managed to say, “It’s all very well for you, but I had to keep a straight face in front of Cleopatra, or he would have been mortified to death; and I couldn’t help myself, so I just turned off my radio so he couldn’t hear me and tried to look solemn while I could feel the laughter coming out my

ears!

“And we went into the poetry reading right away, and there was Wordsworth, in his yellow-green, slowly making himself the most beautiful pattern of shapes you could imagine, with his eyes following the general contours of his body, and—well, first of all, I’d be totally captivated by it, and that it meant something, but then I’d think what would happen if I said something, and then I’d realize that the patterns of dots all over him were his eyes, and I’d imagine looking around with your eyes all over your stomach, and I just couldn’t stand it! I tried—”

“Stop! Stop!” screamed Mike.

“Oh, it hurts! Oh, my side!”

That set us off again, of course. It was a good ten minutes later, with all of us totally exhausted, that Michele, after a dozen or so false starts which got us laughing again, was able to say, “Well, I hope we’ve got it all out of our systems, because it turns out that Wordsworth has been working on writing poetry in Acosmian and English at the same time, and he wants to invite us over to his house tomorrow (we referred to the periods outside the ship as “days”) to give us a private reading, along with St. Peter and Cleopatra and Newton and a couple of others. It’s really very beautiful, and if I hadn’t had that silly notion of Cleopatra’s in my head—” At this we all broke down briefly again, but finally, she continued, “No, I mean it; it’s really entrancing. You wait till you see it.”

Well of course, that day St. Peter must have thought me completely insane. Just the day before, I had been troubled and morose, and in need of the solace of the church; and that day, he’d say something, and I’d imagine him listening to philo-

sophical farts from earth, and I'd collapse with helpless laughter.

Finally, I explained the situation to him, and we both agreed that it was mainly due to the strain we were under, and that it was a good thing we had a day before we had to go to the poetry reading, or we would have ruined the whole thing for everyone.

"Why didn't you tell us?" I asked.

"Well, at first we did not know how you would take it; and then later, it began to seem more natural for us to speak in this way, and we thought no more about it. And your language does have its beauty, however we might have originally regarded it. It just goes to show that physical functions in themselves are neither beautiful nor ugly; it all depends on the attitude we take to them."

Seventeen

The next day we were all sufficiently sedate to agree that it was not dangerous to go to Wordsworth's house for the reading of his poem. He stood in front of the hologram of the forest I mentioned, and the ten of us floated near the opposite wall.

If I had been at all disposed to laugh, the feeling was completely dispelled after the first couple of words. He spoke in a very deep, musical, mellifluous English, extremely clearly and distinctly, with just the right touch of emotion in his voice to be this side of being melodramatic; and at the same time, his graceful body curved and flowed into a thousand exquisite contours, each of which visually reinforced the emotional impact of what we could hear him say. And when you added to this the fact that these glorious shapes actually meant literally what we were hearing, the effect was simply overpowering. It reminded me of my childhood, when I once surprised my father as he was listening to Wagner's *Die Meistersinger*, and the tears were silently streaming down his face. After a while, you didn't see that beautiful body in front of the frozen forest; something happened, and the material world ripped open, and

you looked directly into the face of God, and were afraid, and wanted time to stop at this moment forever, and yet prayed for it to end, because any more of it would kill you.

The English of what he said was the sonnet below; but this is the palest of pale ghosts of what the poem really was, because you have to see it simultaneously translated into the ballet or kaleidoscope that Wordsworth made of it, and hear it with the magnificent voice he put behind it:

When those who live on the limb of loveliness,
Whose world is on, not under, whose sea is air,
Descend the higher sea of nothingness
Into our worldly sea, and find us there,

Are they startled in discovering
That beauty lies, as well as on, below?
That sight is sound, that silent words can ring
As bright and loud as any they could know?

And we have learned to hear as well as see,
And our small world has opened into space;
The flower that unthought-of things can be
Has bloomed and shed its fragrance in this place.

How much, then, if such wonders can be so,
Remains somewhere for both of us to know?

I sat entranced for a while, and some of the others went up to congratulate Wordsworth. Before long, I joined them. Cleopatra was saying, “—quite striking,” when Faraday broke in, “I thought the Acosmian went off a little better than the English, and there were a couple of uneven spots; but on the

whole, I think you've got something."

"I think you're right," Wordsworth replied. "I started it as an interesting little problem, whether you could say the same thing in two languages and have them both be poetry at the same level, more or less. Translations usually work in one language or the other, but not both; so right away, I knew it had to be something original. It's quite a challenge, actually. You find the perfect word in Acosmian, and it wrecks the English line; or you've got just what you need in English, and the Acosmian falls apart. It's very interesting to do, really."

Then a red person—I think Michele called him Washington, but I'd never met him—said, "Well, keep at it; the visual context of the three 'seas' worked nicely, distinguishing and uniting them at the same time, even though the English was, I would think, in itself just a little pedestrian there; but there were a couple of other quite moving interrelations between the two languages."

"Still," said Faraday, "you can't let the additional dimension cramp your style too much. I would have thought that—" and he made a long series of shapes—" would have been more effective, for instance."

"Oh, of course," said Wordsworth, "but that would make the English line, 'Come through space from earth to us,' which is completely flat. You see the difficulty? Give me a chance; I'm not very familiar with the feel of English yet."

"Oh, I don't think he's denigrating it," said Cleopatra, always the diplomat. "It was quite good; more than just respectable in Acosmian alone. I'm sure he just meant—"

And so on. None of us, of course had anything to say in such a discussion, since we could only understand half of the poem.

But a thought occurred to me, and after a while, I took Cleopatra aside and asked him, “Is it true what I understood from the poem, that you never did anything before with sound?”

He made his egg of chagrin, and I hastened to add, “I know all about how our speech first sounded in your ears; but what I mean is, is that the only context you’ve ever heard sounds in until we arrived?”

“Well, animals make similar sounds; and you understand that it never had occurred to us that anything meaningful could be done with it. With us, it was a mere inarticulate grunt, to be avoided in public whenever possible. Under those circumstances, one would not attempt to be creative with it. I hope you understand that this implies not the slightest pejorative attitude toward your speech, now that we have discovered its richness.”

“No, of course not,” I said, and suddenly it flashed across my mind why the beeps our flybys heard were sporadic, in spite of the fact that there were more than a hundred thousand potential beepers in this city alone. Evidently, St. Peter had just eaten something before we met him, and was alone, or we might have come back to earth thinking there was nothing in the Red Spot after all.

While I was musing about this, Cleopatra continued his apologizing; and when I eventually heard his voice again, my original purpose for bringing up the subject came back to me. “Then you know nothing of music,” I interrupted.

“No,” he said. “It has something to do with sound without words, does it not? At least, that is what I understand from my reading.”

“Some of it has words, but the words aren’t exactly the point. In fact, it’s something like what Wordsworth was doing when you put words to it. Gentlemen!” I said. They all looked at me. “I want, on behalf of us from earth to say that, though none of us are poets, we found the poem in English to be very beautiful, and the whole effect overwhelming. But now it is my turn to propose an invitation. It is nearly time for transmissions to begin from the ship, and I would appreciate it if you could all come there and hear something the like of which has never before been sent up to you from earth. I would like you to listen to some music.”

At that word, St. Peter and a number of others immediately showed interest. “I had been meaning to suggest that,” he said, “except that there was always something else so fascinating to hear that I only remembered it at times when I was away from you. I am overjoyed that you thought of it.”

While we were going over to the ship, I was discussing with Mike and Michele what we should ask earth to play first. Obviously, with their brains, it would have to be something far from simple, and Michele finally said, “Why waste time? Let’s start with the best. Beethoven’s *Ninth Symphony*.” As soon as she said it, there was no question.

So I got into the ship, took off my space suit, and typed to earth, “Take off all transmissions of literature for a while, and send us on two channels a stereo version of Beethoven’s *Ninth*.”

While we were waiting the half hour for the transmission to come back, I explained a little about what music was, and about how Beethoven, the composer of the piece, tried to give in music an aesthetic interpretation of what life on earth was

and could be. It wasn't a very good analysis of the symphony, since I had to do everything from memory; but it filled up the half hour, and then Beethoven himself began to sing to this new world.

It was interesting to watch them. First, they were in the egg of attention, and then gradually as the themes began to work themselves out, they elongated into the exclamation point of their smile. One or two made remarks to each other from time to time, but very brief ones; most, however, just blossomed into their new shapes spontaneously. Finally, when the choral part of the last movement came, they all turned into a shape something like a tulip-plant—which I had seen at one moment in those listening to Wordsworth's poem—and remained immobile in that state until the end, something quite unusual for an Acosmian. I had, in fact, never seen anyone absolutely still before.

When it was over, they remained stationary for about half a minute, and then began talking excitedly to each other in Acosmian only, completely oblivious to our presence. I could see them and converse with them though I was in the ship; and soon Cleopatra, who was the most solicitous of all for the feelings of others, became aware of us, and broke into English. "It is poetry stripped naked!" he cried. "It is a dinner in sound! Thank you so much for revealing this great treasure of yours to us!"

"You're more than welcome," I said, a little puzzled at his notion of comparing it to a dinner, until it dawned on me that they derived the same kind of abstract satisfaction from tastes that we do from sounds. It was this comparison, actually, that later made me take gourmet dining seriously after I got back to

earth; and there is something analogous to music in it, though even the gourmets haven't done much in the way of themes and variations in a given dinner.

"Do you suppose we could hear it again, now that we know what to listen for?" asked Wordsworth.

"Oh, no!" said Cleopatra, "We have put them to too much trouble already!"

"Nonsense," I said. "It's no trouble at all. In fact, it gives me great pleasure to be able to tell earth that there's at least one thing that you didn't completely catch the first time you heard it." I typed back to Jonathan, "Play it again, Sam."

"You'll have to wait another half hour, though, for the message to get there and back." This, of course, presented no difficulty to them. St. Peter had told me that they didn't mind waiting for something or putting it off, because eventually they would get to it before they stopped changing, since they just wouldn't stop changing before it happened, whatever it was, even if it took the equivalent of a thousand years.

But of course, in the case of us, there was just a chance that what they learned from earth might be unique, though they all expressed hope that there would be more of us to return to Jupiter after we ourselves left. In any case, it was flattering that they were all anxious to hear the piece over again.

While we waited, they discussed the symphony and the interrelation of the themes, when I suddenly heard the opening bars coming through again. I looked at the clock, and it was only fifteen minutes; earth had barely had time to hear my message, let alone send one back. I thought for a moment that earth had decided for some reason to repeat the transmission on its own, when Wordsworth said, "That's really hard! It must

take a tremendous amount of practice! No wonder you find speaking so easy.”

He had been humming the first few bars himself.

“But we don’t *sing* that!” I said. “That music is made by over a hundred people, all playing different musical instruments; and the singing parts probably have two hundred or more people singing all together.”

“Ah, that accounts for one aspect of the complexity, at least,” he said. “It’s as well I didn’t realize that, or I might never have tried to imitate it. But of course, in the last analysis, it’s just a color, and it’s a question of matching it. It’s a little more easily said than done, however.”

“A color? Of course! Then you *see* these things that we hear. They’re the same thing as light for you. We use a different sense altogether.”

“Yes, I was aware of that,” he said; “but of course you do not perceive what you call radio signals at all, do you?”

“Not directly, no.”

“Something puzzles me,” said Newton or Faraday, I forget which, “It was evident that at the end there were words, but I couldn’t recognize them. I thought we had all your words.”

“I think a little secret is about to be revealed,” said St. Peter with a smile.

“Well,” said Michele, “you see, that’s German and not English. English isn’t the only language that people on earth speak, as you’ve probably found out from your reading. But we only sent up things in English or in English translations, because—well, because we don’t know very much of the other languages, and we didn’t like the idea of you trying to talk to us in Russian or Swahili or something, and expecting us to

understand what you said.”

“Oh, I understand,” said Faraday—I guess it was Faraday after all—“But would you object to our learning the other languages, if we confined our conversations with you to English? It would be interesting to see if there is any interrelation among them.”

“There must be,” said St. Peter. “I detect that English is made up of at least three different languages, and from the little I’ve heard of it, I suspect that German is one of them. ‘Freunde’ is obviously similar to ‘friend,’ and ‘diese’ must have developed into ‘these’ or perhaps ‘this,’ and ‘toene’ must mean ‘tones’ or something like it. From the context, I would suspect that the first line translates into something like, ‘Oh friends, not these tones (or sounds, perhaps); rather let us—something or other—’ referring to the joyous melody that he begins to sing.”

“Amazing!” I said. “That’s practically perfect!”

“Elementary, my dear Watson,” he replied, and I knew another book that he had read. If a little learning was a dangerous thing, a lot of learning could be damned annoying.

The result of this new discovery was that two channels were from then on devoted exclusively to music (which they heard at the fast speed and then slowed down for their own recordings from the initial coins they produced—and very accurate they were too), and another channel was devoted to grammars and dictionaries of other languages, and then to the great foreign literature of the world in the original.

St. Peter told me later that he was happy the little accident about the German had occurred; he had wondered why literary

critics had got so excited about Dante and Goethe and others, and now that he had them in the original, he was able to see the reason.

Wordsworth now began to devote full time to becoming a symphony orchestra complete with chorus—though he decided to begin with something simple, like being only a string quartet. Eventually, he told me, he planned to resume his putting Acosmian and English together, adding music to it, and perhaps even drama; but that would take a long time to develop.

After a week or two, he said to me that it would be a great help to him if he could come back to earth with us, to see just how we made these marvelous sounds.

I expressed some misgivings.

“Is it forbidden for you to take us back with you?” he asked.

“Oh, no!” I said. “In fact, at the beginning, we were wondering in a kind of joking way if we could persuade any of you to come with us. But—”

“Fine, then,” he said. “You need no further persuasion. I am ready.”

“I think you had better listen to him, Wordsworth,” said St. Peter. “He has a certain prudence.”

“Well, in the first place,” I said, “I’m not sure if anyone will ever be able to get back here to Jupiter. Our flight is an odd one, and it might be dangerous to make another voyage, because the principle that allows us to make it might become public, and for various reasons that might not be good.”

“Oh, I see. But I don’t need to come back. When I stop changing, I’ll be able to tell the people here all I know.”

“Well, but the fact is that we live in an atmosphere of oxygen, and you live in hydrogen; and oxygen and hydrogen

explode when they interact. I don't know what would happen to you people if you got into an oxygen environment."

"What do you think, St. Peter?" he asked.

"If we knew how our bodies were constituted," he answered, "we might be able to discover the answer. But as it is, I rather think that staying here would be the wiser course."

My eyes widened. "You don't know how your bodies are constituted? How can that be? You know everything else."

"It is the other of our prohibitions," answered St. Peter. "We are not to attempt to go beyond the wall, and we must not try to find the constitution of our own bodies."

"But why not? I can understand the one, but not the other."

"We do not know."

"But can't you ask Caesar why? You could tell him you need to know if it would be safe for Wordsworth to come with us." I turned to Wordsworth. "We'd be happy to take you back, if we knew it was safe."

St. Peter answered, "But these prohibitions do not come from Caesar. They were given, tradition says, at the very beginning by our Awesome Friend."

"Oh," I said. "Then I guess that settles it—at least as far as finding out about yourselves is concerned. But if you want to try coming with us anyway, it's fine with us, except that I can't guarantee we'd be able to bring you back."

"I will have to consider it prayerfully," said Wordsworth. "I would like very much to go, but it might be the equivalent of going beyond the wall."

The next day, St. Peter and I were alone together, and I asked him if he thought Wordsworth would actually come.

“I really cannot say,” he said. “This is the first time, really, when we have ever had to be what you might call ‘casuistical’ about anything. Our two prohibitions have been so simple and so clear that, as far as I know, there has never arisen an instance where one might or might not be violating one of them. I am sure that Wordsworth’s final decision will be the one which our Awesome Friend will approve of, since He knows that Wordsworth would never try to do anything but what is acceptable to him. But what that decision will turn out to be is not something I would venture to predict.

“You mentioned that these prohibitions were contained in a tradition. Do you have stories or legends dealing with that tradition as we do?” I asked.

“As a matter of fact, we have a legend that is very much like what I read in Genesis. I had been meaning to make you acquainted with it, but whenever I thought of it, something else had come up to displace it from my attention. Perhaps you would like to hear it now.”

“By all means.”

“You will have to forgive my attempts at translation; I am no Wordsworth, and it is very beautiful in Acosmian and deserves better than what I suspect you are going to hear.

“‘In the beginning, there was the Master, but there was nothing that was a slave. And the Master said, ‘Let there be water,’ and the water was, and the water obeyed its Master. And the Master said, ‘Let there be light to enlighten the waters,’ and the light too obeyed the Master and came into being. And the Master said, ‘Let there be a ring of vegetation to confine the waters and the light’; and this too obeyed, and so it was.

“And then the Master made to himself a person, to be a friend and servant, but not a slave; and he placed the person in the light and in the waters, inside the ring of vegetation, and the person grew and was glad. And the Awesome Friend said, “I place you in the light. You may move as you wish in the light; but outside the ring of vegetation you may not move.” And the servant swam in the light, and was glad.

“And the person moved to the ring of vegetation, and beheld it, and the vegetation said to him, “Why do you behold us?” And he answered, “Because you are fair to behold.” And the vegetation answered, and said, “Far more fair is that which is on the other side of us.” And the person answered and said, “That may be, but I am forbidden to behold it.”

“And the vegetation replied to him, “That is because the Master wishes you to remain ignorant. He fears that if you knew what was beyond me, you would be His equal, and He would no longer have power over you. He knows that you will discover others like yourself, and He wishes you to be alone.”

“Now the person was lonely, though happy, and he also longed to know. But he said to the vegetation, “He calls Himself my Friend, but he made me and is my Master nonetheless. If he wishes me to be alone and ignorant, I am content so to be.” And the person turned away from the grass, which fell silent and has remained silent to this day.

“Straightway, the Awesome Friend appeared to His creature and said, “Have you been speaking to the vegetation?” And the creature answered, “I have.” And the Friend asked, “Then why are you here, and not beyond the wall of vegetation?” and the creature answered, “Because you commanded me to remain here.”

“And the Master said, “Well done, my good and faithful servant. Because you have been faithful in one small thing, I shall reward you in many things. Because you were content to be ignorant in obedience to me, you shall have great wisdom. Because you have been content to be alone in obedience to me, you shall have many companions like yourself, and shall father all manner of creatures lesser than yourself, over which you shall yourself be master and friend, as I am Master and Friend of both you and them. And because you have obeyed me and kept my commandment, you shall live forever, and after creating your own self unto your own image, you shall come to be with Me and we will be companions for all the endless ages.”

““Now,” said the Master, “come unto me,” and the creature came. And the Master smote him, and divided him into many parts; and the parts grew, some into plants, some into animals, and some into persons like unto himself. “Now be happy and rejoice,” said the Master, “and multiply and fill your world according to your own wisdom which I have given unto you. I give you but one further commandment for the present; you must not attempt to penetrate the wall of vegetation, nor must you attempt to penetrate the mystery of your own body. Animals and plants you may study, but your own body you must not dissect or mutilate, for your own body and those of your companions are sacred to me, for I shall dwell within all those who invite me.””

I remained silent for a long time.

Finally, I said, with tears in my eyes, “The parallel with Genesis is remarkable, isn’t it? I wonder if we could have been like you if Eden had gone the other way.”

“Who knows?” said St. Peter. “There are obvious differences, and each, of course, is a tale told to make a point, which I believe is no less true for being poetically stated. But as I study you and your literature, I find that you die, yet have a belief in a bodiless life after death, which does not make sense for a creature like me who is an embodied spirit. You remember that I was startled to find that you could die; but you did not tell me about the life after death.”

“Not everyone believes there is one.”

“I am aware of that. We ‘believe’ also, of course, since we do not know what actually happens when we stop changing, and none of us have actually seen our Awesome Friend—before then, that is. I gather that Michael does not believe. Do you?”

“I don’t know. Sometimes I think I do, but sometimes it seems too fantastic. Our life is hard, and it sounds like something made up so that we’ll be able to bear it. It’s too good to be true.”

“Having seen me, perhaps you should consider that it might be too good *not* to be true.”

“I certainly hope so,” I said.

“And then there is the fact that your emotions—which are the same mind as your reason—war against your reason, as your Paul said, and make you do what you do not wish to do. This makes no sense either. It sounds as if there was some kind of rebellion, and the punishment for it was that your own self should rebel against itself, until finally your bodily self escaped entirely from your mind, and you died, living only a mental life afterward—until, as one of your religions holds, the Master reunites the mind and the body and you are finally a true unit.”

“When you put it that way, it sounds reasonable—if we are

really embodied spirits. I never gave it any serious thought before; to me it was just a story that would be nice if it were true.”

“Well, in one sense it is that, I would think; but that does not mean that it could not be a poetic way to state a profound truth. It explains to me, at any rate, why, no matter what system of government you people invent, it always seems to be corrupted.

“You have always seemed to blame the system of society; but as I see you people, I would think that *any* system of society would be ultimately unworkable because of the people in it. For us, any system succeeds.”

“You don’t leave us much hope,” I said.

“I must confess I do not see a great deal of hope in social systems,” he answered. “We live in harmony because reason rules us, and we are not at war within ourselves. We need not be commanded to do what is for the common good, since we recognize that this is ultimately for the good of each of us, and none of us puts immediate benefits over a greater long-range good. None, that is, except the unfortunate people, and they can do no harm to anyone except themselves.

“But in your case, to expect people to act for the common good often means having them act against their individual inclinations and even benefit, at least in the short term, but even sometimes in the long run; and this is irrational for anyone.

“No, I suspect that an ideal society is possible only for an ideal people, because only a person who is certain that he will succeed in everything irrespective of what happens can regard his own concerns as unimportant and yield to society’s wishes.”

“But you wouldn’t say we shouldn’t try to improve things, would you?”

“No, of course not. I suppose what I am telling you is that if I were one of you, I would not expect any social system to do more than create as few difficulties as possible. Until the vast majority of your people can regard themselves and their own personal interests as unimportant objectively, I see no realistic way in which a social system can be more than a check on inhuman behavior; and a poor check at that.

“But how can we consider ourselves unimportant?”

“Ah, that is the task, is it not?”

“You know something? Mike told me that he finds your way of life boring. He says there’s no challenge in it; nothing to fight against.”

“I can see that he might say that, from what I know of him. He is a good example of the fact that if you had on earth the ideal, many of you would be stifled by it. You would have to change your nature back to its natural condition—or perhaps I should say its logical condition—even in order to be able to appreciate the ideal for what it is.”

“You don’t paint a very pleasant picture for us.”

“I would not give up hope. Perhaps it is true that the Awesome Friend has in fact become one of you, just so that each of you may have the possibility of changing his attitude. I think if this is the case, then individuals who take advantage of this gift can live lives of achievement such as ours.

“Perhaps, in a sense, you are more fortunate than we, if this is the case. We develop into happiness, and you would win it; and it must thus mean more to you than to us if you do achieve it. And there is that special companionship with the

Master that you would have and we lack, for all our friendship with Him.”

Eighteen

Shortly afterward, Mike and I were together in the space craft. “Wordsworth says he’d like to come back with us,” I said.

“Oh, yeah?” he answered, looking up from his notes. “Who?”

“Wordsworth. The one who gave the poetry recital.”

“Oh, him.” He went back to transcribing his notes.

“You don’t sound too enthused. I thought you were the one who was anxious to bring ’em back alive.”

“I still think it’s a good idea to bring *somebody* back.”

“Why not Wordsworth?”

“Paul, I’m in the middle of a complicated equation at the moment. I have nothing against bringing him back; but personally, I think we could do better than bring back a poet. If he wants to come, fine; but if we’re going to bring somebody back, maybe we could look around for someone a little more useful to bring back too. Okay?” And he went back to writing.

After a while, he seemed to come to a stopping-place, and I said, “I don’t actually think we’ll be bringing anybody back

with us. Wordsworth'd like to come, but he thinks it might be like going beyond the wall, and he's praying over it to see if he can find out."

"Typical."

"Well, there's no real way he can find out for himself, and—oh, by the way, that reminds me. I found out that they have two prohibitions; they can't go beyond the wall, and they can't try to find out about their own bodies."

"Yeah, I know."

"You do? How did you find out?"

"I asked, of course, and they told me."

"Well, he thinks if it's implied by the prohibition, and he decides to come, he might be harmed by the oxygen atmosphere."

"It figures that that's the way his mind'd work. We can write him off, then; he'd never have the courage to try for himself."

"I don't think it's a question of courage."

"Whatever. He might think it's an indirect way of finding out about his body, or he might think that it's an indirect way of going beyond the wall, all right? It *might* be forbidden, and not only are they not going to do what *is* forbidden, they won't do anything that *might possibly* be forbidden. They might find out something."

"What's wrong with that?"

"I don't like people who're scared of finding out things."

"My God, Mike! Think of all that these people know, and all they've found out about us!"

"Oh sure, but none of those things *might* be forbidden. They won't have anything to do with certain subjects, though. How do they know that these subjects aren't the most impor-

tant thing they could ever find out? They just *might* discover that they're not really immortal, for instance."

"Oh, come off it!"

"How do you know? You just take their word for it. And how do *they* know? They don't because they're not allowed to find out. I just don't like people who blindly accept a religion that forbids them to know what the facts are. If we'd kept all our religious prejudices, we'd still be in the Dark Ages."

"Yeah, but we're not on earth, Mike."

"How well I know that! And we're not on earth because of guys like Galileo, who wouldn't let priests tell them what they could find out and what they couldn't find out!" He paused briefly to let himself calm down.

"Look Paul," he said finally, "you and I don't agree on this, and there's no point in going on with it. I have a lot on my mind."

And that was that. We continued for the rest of the period in silence.

That day, as I went for my walk with St. Peter, I decided I might just as well ask him. "St. Peter?" I said.

"Yes?"

"About Wordsworth. Mike seems to think that he won't come because he's afraid he might possibly be violating one of the prohibitions. Or both."

"He is probably right."

"But why won't the Awesome Friend let you find out about your bodies? Don't you think it might be useful to know about them?"

"You are leading up to something. But to answer your

question, we consider the matter this way: He has forbidden so little to us that it is the least we can do to show our gratitude to Him. Perhaps some of the knowledge might be useful, but we do not suffer from the lack of it, and so the sacrifice is no real sacrifice. And you yourselves have confirmed how reasonable it is not to go beyond the wall. Presumably, there is an equally valid reason for the other prohibition.”

“But has the Awesome Friend personally told you not to do this?”

“No, as I told you, it is a tradition that He told our first Parent; and it has been handed down since then.”

“But how do you know the tradition hasn’t been garbled?”

“Has Michael been talking with one of the unfortunate people? This sounds like what they say.”

“No,” I said, and thought for a moment. “Not that I know of.”

“Paul, we do not garble traditions.”

“But how do you *know*? Your ancestors may not have been as smart as you are.”

“We do not *know* in that sense, of course. It is part of our faith. Yes, we have faith here on Acosmia; no one sees the Awesome Friend until he stops changing. Until then, one must believe in Him, or not. Most do. But I think you are not really concerned about the implications of our faith. You are preoccupied about Michael, or I am much mistaken.”

“Well, yes, actually. He was the one that brought it up.”

“But it is not that about him either. If I interpret what I know of him, he has always had a great deal of faith in what you call ‘science,’ and would naturally resent our avoiding the investigation of forbidden subjects, thinking of how science

made progress on earth by at least apparently flouting the prohibitions imposed by religion.”

“Yes, that’s the way he is.”

“And this eagerness to search out everything is doubtless a laudable trait on earth—at least in many respects, since you are all half blessed and half unfortunate, and even your priests seem sometimes to use religion for their own ends. But if he has always been this way, perhaps not even this is the reason you are worried about him now.”

“No, not really. It’s—I don’t know, it’s that ever since we began this trip and took Michele along, he’s changed, and . . .” I didn’t know what to add.

“I understand. And has there never been a hint that Michele reciprocates his love for her?”

“His what?”

“Am I mistaken? No, I think not. If I was not mistaken about his attitude toward science, this is much more obvious.”

“But—” I said. “But I was under the impression that he hated her. And so is Michele herself.”

“I think you are wrong, if I may say so; perhaps because you are her brother. You people, you know, are not really so very different from us; in fact, if I may say so without seeming invidious, you seem to us to be a sort of perverted version of an Acosmian, with emotions that get out of control and blind you to facts; but the emotions seem, by and large, quite similar to ours.

“Now among us, ‘love’ does not always imply ‘liking.’ I am referring to the kind of love that would be an indication of the partner one should marry; sexual attraction. ‘Love’ in this sexual sense is, among us, and I seem to infer from your

literature among you also, a sort of inability to be indifferent to another person.

“With us, of course, it occurs only among friends, or if it begins with someone we find not desirable for a partner, it ceases as soon as we discover this, because our emotions never insist contrary to reason. But it is clear from your novels that this inability to be indifferent often fastens itself upon a person quite independently from your reason or will, and often enough upon a person which for some reason you know is not a proper marriage partner. And the result is great trouble of mind, a struggle against one’s own feelings, and quite frequently an apparent hatred of the beloved. Am I correct so far?”

“I don’t know—I guess so. But I just never thought of Mike that way, especially with Michele. Mike’s Chinese.”

“And is it forbidden for the Chinese to marry those who are not Chinese?”

“Forbidden? No. But so few of them do that I just never thought about it.”

“And perhaps for that very reason, Michele has never considered Michael as a possible husband?”

“I don’t think Michele has ever considered anyone that way—at least since college. But you’re right, though. I don’t think the idea ever crossed her mind that Mike might be in love with her.”

“Might it not be, then, that Michael thinks that she has never considered this because of the fact that he is Chinese?”

. . . The light began to dawn. “You mean he might have been prodding her all this time to try to make her realize that he was a man, and could be interesting to her as a man? And all

the time we thought it was just witty banter!

“But he did finally provoke her into making a remark that he was foreign-looking, and it hurt him terribly. We couldn’t understand it at the time, because he had just insulted her in a worse way—and he’s never gotten over it.”

“Yes,” he said. “Well, it cannot be a comforting sort of life to be constantly beside someone you love, who appears to have a total indifference to you, and then to have your worst fears confirmed: that she looks upon you simply as a foreign object.”

“Then that’s why he didn’t want her to come with us! He didn’t want to be put in that situation—and that’s why he wouldn’t come when he found out that she was coming anyway, and we had to force him into it—and that’s why he was so happy the first part of the trip! He was with her! I think you’re right!”

“I have some other evidence, Paul, that I have never mentioned to you, because you did not ask me until now. You see, there are many times when I observe Michael when you cannot see him; when he is behind the two of you, for instance. We have eyes all over us, and can see all around us, of course; but Michael evidently does not think of us as of any importance, or as anything but the animals that swim by, except that we can speak and inform him of things he wishes to discover.

“In any case, I often see him do this, looking at Michele, behind you.” And St. Peter made himself into a replica of Mike’s upper torso in his space suit; he looked over at me with Mike’s “head” caricatured, making a deep sigh, and then hung his head and hunched his shoulders. “It seems those gestures are compatible with the attitude of one who greatly desires an unattainable goal, are they not?”

“Poor Mike!” I said. “St. Peter, would you mind leaving me alone for a while? I have to digest this, and try to figure out what I can do—if anything.”

“If I may be permitted to add something, Michele does not seem to me to be exactly indifferent to Michael herself, though I do not think she realizes this. It may work itself out by itself, given time. If something should happen that draws her attention to him in a sympathetic way, then I believe she could fall in love with him also. Of course, there might be reasons why it would be better if they did not marry, if they are of different races.”

“Well, it wouldn’t be easy. People still have funny ideas on that subject, even after all this time; though I don’t think Michele does herself—and as far as I’m concerned, if they love each other, I certainly have no objection. Not that my objections, if I had them, ought to make any difference. But—but I’ll have to think about all this.”

“Very well,” he said. “I will see you at the beginning of the next day.” And he left.

I wandered around the streets of the city, not noticing where I was going. I thought for a moment of going back to the church, but somehow, I felt the need to be in motion; and I was a little nervous about going in there by myself; they might think I was intruding.

My mind was in total confusion, except for one thing: I was furious with St. Peter for knowing so much, and for being so right. They always were so perfectly, disgustingly, confidently, politely right in everything, and so considerate that you never had any grounds for being angry with them.

I tried to think back over the details of the trip so far, to see

if I could prove St. Peter wrong so that he would at least turn out to be wrong in something; but everything made sense on the supposition that Mike was in love with Michele and saw (or thought he saw—what was the truth of that?) that she regarded him as just another person, or worse. Even his joking threat to commit suicide didn't elicit from her anything but what anyone else's threat would have. And, come to think of it, maybe it wasn't all that much of a joke, if he really was in love and there was no hope.

But of course there never is no hope in cases like that, though you could never tell how someone as complex as Mike would understand it.

Poor Mike! He could see so clearly Michele's indifference, and be so hurt by it, and yet hadn't the faintest idea that he despised the Acosmians because they were foreign-looking! And he did. But that's how people were, I told myself; I probably did the same thing in my own way. In any case, recognizing it didn't solve anything.

It was interesting what a simple people the Acosmians were, in comparison with our wheels within wheels. In spite of their enormous intelligence, they were perfectly frank and open in everything, because they had nothing to hide, and no emotions leading them in one direction while common sense led them in another. Wordsworth's desire to come and see earth, for instance, would simply vanish if he decided it would be better not to come.

And I discovered that I hated him for it.

Why should they be able to decide exactly what they wanted to do with their lives and be certain that they would achieve every last goal of theirs, and we were almost as certain that our

own goals, however noble and laudable, would be forever beyond our grasp? Why should they have been made so much better than we? Just because their Parent didn't sin and ours did? How fair did that make their Awesome Friend?

Suppose I could be sure that anything I wanted to be would be mine eventually, suppose I could be like them, knowing all I wanted to know and not wanting what I couldn't have, and that I'd never die, and just stop changing when I'd got everything I wanted and just be that way forever and ever. What then?

But that was just as hateful an existence as this one. Mike was right. Why bother working for something when you were sure that you'd get it? In a sense, they were like earth children of rich parents, who see that anything is possible, and for that reason never try for anything, and spend their lives getting drunk because nothing is really worth the effort if you're sure you can have it. Wasn't the whole joy of discovering how to control mass the fact that I'd found it out when it wasn't at all certain even that there was anything to find out, and that I might be spending ten years just wasting my time? Let any of them match that for satisfaction!

And St. Peter recognized this; he said that in some respects we were more blessed than they were, for this very reason. But it didn't bother him; he was perfectly content to be as he was. How horrible to be perfectly content!

The place was clearly getting to me. Such wonderful people, so much to be envied—or pitied—and so complacent! If only they'd even be a little self-righteous, if they only had one fault you could actually blame them for! The only thing they had was true virtue, which didn't even flaunt itself, which made it

harder to take than ever. Oh, yes, when you were with them, you were charmed by their kindness and consideration; but as soon as you got back by yourself, you saw that you had no leverage on them, no way you could—hurt them. Their very kindness hurt you in your wretchedness so terribly much, and there was nothing you could do that would hurt them in the least! How could any human being relate to someone who could not be hurt? That was the problem. Why was it getting dark?

Suddenly, I came out of my reverie with a shock.

Getting dark?

It was as if a cloud was passing over the sun. But there was no sun here, only the incandescent center of the planet. I looked down; the light was definitely dimming, and dimming fast.

Where was I? I had been wandering aimlessly, thinking to myself, and was in a part of the city I couldn't recognize. I had no idea what direction I had come in, or where to go to get back to the ship. People passed by, but no one I recognized, and I felt embarrassed to ask directions of people who would only be shocked or amused by the way I talked.

And it was growing darker and darker. I looked at my watch 19:43. Ten minutes to eight, earth time. When had I left the ship? Three o'clock, which meant the five hours would be up at eight. In seventeen minutes. I had better ask directions.

I turned to find someone to ask, and then noticed that the rapidly darkening streets were suddenly empty. I saw one person swim by a block over, and I shouted at him, but he was hurrying somewhere, and paid me no attention. Then I saw two more, both swimming for all their might in the same

direction, as if they were afraid to be late for something. I shouted again, but they did not seem to hear.

I had never seen an Acosmian in a hurry, since St. Peter and Cleopatra had guided the ship to the city. Something odd was going on, definitely.

It was really dark now; down below, the center of the planet barely glowed a sickly red. A small animal swam beside me and brushed up against me for comfort. I put my hand down automatically and patted it, and it swam away, looking for a place to hide, like a dog in a thunderstorm.

It was the animal's behavior that really terrified me. Something really unusual was happening, and here I was alone in a deserted part of the city, which was now so dark I could hardly see the buildings across the way. I looked at my watch again, and the LED numerals glowed in the darkness: 19:45. Already it was pitch dark. I couldn't even see my hand, only the bright numbers, which suddenly flipped over to 19:46.

Fourteen minutes. Possibly an hour and fifteen minutes of air left; and I didn't know where I was, or what direction to turn. I could wander for hours or days in this huge city without coming to an end—no, not days, or even hours. I could wander for an hour and fifteen minutes, and then I'd just hang there, suspended, and rot inside my space suit.

Maybe if I went where the others were headed, I could find someone to help me. I tried to do a 180 degree turn, and hoped I'd got it right; I couldn't see anything at all. I activated my propulsion, and tried not to panic. Thirteen minutes.

Suddenly, I crashed into the wall of a building. At what angle? Wasn't I supposed to be going down a street? "Help!" I shouted, and my voice rang inside my helmet. "Help! Oh

God, help me! Dear God, my God, help me! Help, someone!”
Silence.

I fought with the panic. Eleven minutes. Try to go somewhere, anywhere; you won't find anyone here. Where are they all? Why isn't anyone around anywhere? Ten minutes.

I headed just a little off from the building I had hit—or so I thought—and activated my propulsion very slowly. Now that I was moving, the terror abated somewhat; at least I was doing something. Probably the wrong thing, but what difference did it make? It was better than just staying there to die. Eight minutes.

I brushed lightly against the side of a building, and kept going slowly, feeling the wall with my fingertips. It disappeared. An intersection. I was going down a street. Please God it was toward someone and not away from them. Five minutes.

Another building. I was still going down the street. More buildings. Three minutes. The wall disappeared. Another intersection. One minute. Another wall beside me. 20:00. One hour of air left. I felt the wall with my hand; it felt rough, like lava. It looked like lava, too; reddish-black against my dark grey-looking glove. Fifty-nine minutes of life.

I had seen the wall! It wasn't as dark as it had been; it was getting lighter! My heart leaped so hard in my chest I thought my ribs would break. If it only got light as quickly as it had got dark, I'd be back in brightness in fifteen minutes! And it was! I could already see the other side of the street I was moving down! Fifty-five minutes.

It was still too dim to be able to tell if anything was familiar, so I kept going, straining my eyes. It grew lighter, and I began to be able to distinguish the fantastic buildings; first their

shapes, then a hint of their color. Nothing looked familiar. Fifty minutes—forty-nine.

Then it became completely light again, and I wandered in an utterly deserted city, so teeming with people just moments ago, and now absolutely empty, waste, and void. There were only the little animals, which came out of buildings and crannies, and swam about, bewildered at what happened. Thirty minutes.

No one at all. There were strange clubs, larger buildings, but no one in them. Not a soul in any house; I went in several, realizing that it was impolite, but this was an emergency, and they'd understand. Unless they were the unfortunate people. No one. Fifteen minutes of life left.

Suddenly the street opened out into a huge square, and there was the church! At last! I knew where I was; I had been in a quarter of the city directly opposite where the ship was. I had even been down this street once before, but didn't recognize it, because I had traveled it in the other direction. The ship was only ten minutes away. Twelve minutes left.

It was beginning to be a little difficult to breathe. I put the propulsion on to full, and sped down the empty street toward the ship, winding in and out of the little avenues I now knew so well, all empty, which was fortunate, since I flew by with no concern about hitting anything. I did strike a few animals in my way, which swam away astonished. I almost laughed once, and the intake of breath with so little oxygen almost made me faint. Three minutes.

I let myself in at the airlock, closed the door, and let the hydrogen out and the air in. That took three minutes, and I had two left. As soon as I dared, standing knee-deep in liquid

hydrogen, I ripped off my helmet, breathed a mixture of hydrogen and oxygen, and fainted.

Nineteen

I woke up in the little alcove that was my bedroom in the first stage, lying on my pad with Michele bending over me.

I thought I saw Mike over by the hatch to the space craft, and heard him say, "Then I'll go below." My first thought was, "Damn it! If Mike were here and I was there, that'd be one problem solved!" I asked, "Was that Mike?"

"Thank God!" she said. "We've been worried sick over you. What made you come back so late?"

"Oh, I got lost, that's all. Is Mike all right?"

"Yes, he's okay. He got back an hour ago, about ten minutes after it got light again. Where was St. Peter that you got yourself lost?"

"I asked him to let me alone just before it got dark, and I wandered around, and then when it began to happen, I didn't know where I was, and suddenly there was no one around. I don't think I've ever been so scared in my life. Where is everybody? Do you know?"

"Everything's all right," she said. "I know where they were. But we'll talk about it later; this is your sleep period, and you need it."

She was right. All of the nervous tension had completely exhausted me, and I had in addition a terrific headache, probably because the adrenaline in my veins had gone down, and because I'd had a few minutes of not enough oxygen. I asked Michele for a headache pill, and was practically asleep in spite of the pain by the time she brought it. Then she left, and after a few minutes of lying on my back staring at the orange stain on the ceiling of the first stage, I fell asleep.

It is peculiar that you never seem to dream about the important things that just happened to you. I dreamed a great deal during that sleep period; I remember waking several times in the middle of a terrifying feeling of helplessness, and realizing that it was really the headache that kept waking me up. But the dreams I remember weren't about darkness or emptiness; they all revolved about that stain on the ceiling that I had half-noticed as I dropped off to sleep. It became a problem I had to solve, or turned itself into an equation I couldn't get into integrable form which meant I wouldn't pass the exam for my Doctorate, or it was a message to be decoded before Mike could see me so he could marry Janice, or a theme that Wordsworth had to turn into a symphony, leaving me to finish so he could return with us; and so on.

I woke, anything but refreshed, but now incapable of more sleep, because I was now curious about the darkness and why the city had been deserted. "Michele . . ." I called, rather feebly.

"I think maybe you'd better stay inside today," she said as she appeared through the hatch. "I told St. Peter, and I'll stay to keep watch."

"You don't need . . ." I said as I tried to rise, and immedi-

ately felt the way Humpty Dumpty must have. “I guess maybe it’d be a good idea,” I said, and lay back down.

“Mike already left,” she said. “Cleopatra was out there too, and he understands.”

“I think all I need is rest and some food.”

“Good, I was wondering if you could eat. I’ll be right back.” She returned with something light—literally. We had whipped as much air as we could into everything that would take to being whipped, because it made it somewhat less unpleasant to eat. “Go easy on this,” she said. “Remember, you’re on Jupiter, and you don’t want to put your body to a strain right now.”

“I’ll be okay,” I answered. Getting the food down wasn’t too bad, but I needed to drink, and there was no way to make whipped water. But I managed, though when it was all over, the headache came back for an hour or so with a vengeance.

Apparently I slept a little more, because the food was gone suddenly when I looked up at Michele and asked, “Now, what is it that happened? It’s got me so curious I can’t sleep.”

She laughed. “You’re in a fine state, you are. Well, I was in Cleopatra’s house. We’d just come back from a trip over to the big forest for something that are like our mushrooms—you know, that don’t photosynthesize, but never mind—and things began to look funny, and then I noticed that it was getting dark. I asked Cleopatra, and he said, ‘Dark? Yes, you are right. It is the call.’

“I asked him what call, and he said that it was nothing that concerned me; and then he got all nervous about maybe having insulted me by telling me to mind my own business, and he started in apologizing the way he does, and I couldn’t get

anything coherent out of him, he was so anxious to get away and yet not to hurt my feelings.

“By piecing things together, I learned that it was some kind of call by the Awesome Friend, you know, and they were supposed to all meet in the church.”

“So that’s where they were all going in such a hurry! I should have thought of that and followed them!”

“Well,” she went on, “he didn’t invite me, and since it had something to do with their religion, I didn’t want to butt in; so I told him I’d be perfectly all right and would go back to the ship, and he was off like a shot, after he’d assured me three or four times that the darkness wouldn’t last long, and it was nothing to be concerned about. It was fairly dim by that time already, and I hoped he’d make it while he could still see; but of course he lives right next to the big square.

“Well then it got completely dark, and I began to get a little scared—but of course you know about all that.”

“What scared me most was the way the animals were behaving. They didn’t know what to make of it.”

“That’s right, now that you mention it. They were all swimming for shelter. It must have been horrible for you.”

“I panicked completely for a couple of minutes.”

“I can imagine. I looked down, and it was really spooky; the light was just dimming out. I couldn’t tell if the fire was going out down there, or if there was some kind of darkening of the stuff between us and it.”

“I know. Talk about the end of the world! I was sure it was the end of me, anyway. The LED’s in my watch clicked on, and all I could see was the numbers staring at me, telling me how much longer I had to live.”

She put her hand on my shoulder—I was lying half on my side—and didn't say anything for a while, and I finally said, "Then what did you do?"

"Well, of course, it was only dark for about ten minutes or so, I guess—maybe less, I wasn't timing it the way you must have been—and then the light began to come back. I was still in Cleopatra's house, because it was dark enough by the time he left that I thought it would be wise not to try to leave. I looked out as soon as you could see anything, and there was nobody around, so I decided I'd just go over to the church and look in. And there they all were, all jammed together, and way up top there was a purple one in the bright light from the top giving a sermon, I suppose. But then it was beyond time to get back, so I came home, and Mike was already here, but you weren't. We both got really worried as the time got closer to you running out of oxygen. Then Mike made some stupid remark about it's being a shame it was you instead of him, so we could have spared ourselves palpitations of the heart. I wish he wouldn't *say* things like that!"

I didn't know what to answer, so I said nothing. Poor Mike! I lay back as though tired.

"I've been getting you all tired out," she said. "I should know better. Anyway, everything's all right now."

Oh, yes indeed. All right.

"By the way, Michi," I said. "How did that stain get there?" As I lay back, I noticed it again.

"What stain?"

"That orange spot up there on the ceiling."

"Well, what do you know?" she said. "I never saw it before. Looks like Mike's been throwing plants around. I wonder what

he could have been doing.”

“It got stuck in my head when I fell asleep, and has been rattling around; but I suppose it’s nothing.”

“He probably got some plants off the surface for some reason and they slipped out of his hands when he got inside. But I never knew they’d stain things. Maybe he was experimenting with their food. Well, you get some sleep. I’ll be down in the cabin if you need me.”

I didn’t, as it happened. The headache had more or less disappeared because of the food and water, and I slept through the whole ten hours until the next “day”; and it was glorious. I had forgotten what it was like to sleep more than five hours at a stretch; and now that I was reminded, I had a reason that would temper my regret at going back to earth in another week.

St. Peter greeted me the next day with great concern, and said, “I ought at least to have warned you. Michele told me that you were quite frightened, as indeed you must have been; even we were impressed by the darkness.”

“My only real problem was that I didn’t know how long it would last, and whether I’d have enough air to get through it.”

“I blame myself greatly. When something has not happened within the memory of anyone, one does not, of course, expect it. But I ought to have realized that unlikely events are apt to generate unlikely events, and have anticipated that it might occur. And to think that I actually did tell you of the call, but not of the form it would take! It was inexcusable of me.”

“Good heavens, don’t even think of it!” I exclaimed. “In any

ordinary circumstance, you would have been with me; and I was the one who asked you to leave me alone, after all. Nothing happened to me beyond the first good night's sleep I've had in over a month—and a scare. And on the whole, the way I feel now, the sleep was worth the scare. I hadn't realized how much I needed it."

"You are too kind. The irony of it all was that you were responsible for it."

"*I was!*"

"Well, your arrival here. But you were responsible, I understand, for your ability to arrive here. Michele has already told me that she explained that it was a call to the church for a revelation from the Awesome Friend. As I say, we had had no experience of what to expect, since the tradition is very vague on exactly how the revelation was to be given, or even if there was to be one at all; all we knew was that if it should begin to darken, we were all to gather in the church and wait, even after the darkness passed."

He was obviously enjoying his little story; such novelties as the arrival of beings from another planet and revelations from the Awesome Friend didn't happen every day there; nothing at all unforeseen had probably happened in Acosmia for hundreds or thousands of years. He was like a man from a little town, all excited about the crash-landing of a plane in his cornfield.

"I looked for you, actually, to warn you of what was happening, but could not find you; and no one I met had noticed you. They were all preoccupied with getting to the church promptly; and I assumed that the Awesome Friend had you in his care as well as me, and would have arranged this separation for His own purposes, and it was my duty to obey. So I put

both of us in His hands, and sped off to the church, arriving among the last stragglers.

“It was by now completely dark outside, and whether by contrast or for some other reason, the light in the dome of the church seemed to grow brighter and brighter. I disposed my mind to be as receptive as possible, thinking that the Awesome Friend would infuse into each of us the knowledge that we were to have; but nothing happened.

“As it began to grow lighter outside, (he made a series of shapes, which was evidently someone’s name) swam to the doorway of the Holy Room—where the light is—and began to speak. He is one of our priests, and one known to have a special relationship with the Awesome Friend, something like your Teresa of Avila seems to have had, or your Moses.

“He began by saying that the Friend was aware of the new arrivals in our midst, referring of course to you three, which caused great surprise among those who had not yet heard that there were visitors from another world, or even that there was another world. I expect that Washington is going to have many calls upon him for copies of the literature and lore of earth.

“Then he said that the Friend was pleased with the way we had treated you, and that we should continue to be gentle with you—which caused me some qualms of conscience—and then he added that there was to be a new injunction laid upon us. We were not to attempt to leave our world.”

“I see,” I said. We were both silent for a few minutes. “Yes, I can understand why you said we were responsible for this. I must remember to ask Wordsworth to pray for us before I leave. He seems to—how shall I say it—get dramatic results.”

He laughed.

“In a way, it’s a shame,” I said. “You people are so brilliant and so kind, and you notice so much. I was kind of hoping that it would be all right for some of you to come to earth; I’m sure that you could do a lot of good there.”

“It would seem that way, would it not? I myself was rather toying with the idea, and waiting to see how Wordsworth resolved the problem. I respect his intellect greatly, and if he had decided that there was nothing against his going, I would probably have made overtures myself.” My heart leaped a little at the thought. In the few weeks we had been here, he had become a better friend than anyone I had known back home; he was a living refutation of Plato’s dictum that friendship exists only among equals. But it was out of the question now.

“Of course,” he went on, “my specialization up to now would not of itself have solved any of your problems; and it must be the case that our presence on earth would do more harm than good—to both of us.”

“By the way, what is your specialization, St. Peter? You never told me.”

“Now, of course, it is you people. I would have mentioned earlier what it had been, had I not inferred from reading about you that those of you on earth—at least men—seem to have an inordinate interest in what my avocation was. Hoping that you shared that interest, I decided to save it until late in your stay, as a treat. Can you guess what it is?”

“I haven’t the faintest idea,” I said. “It can’t be science; we already know scientists. And it can’t be art. Architecture?”

“Come now. Are the healthy young males among you preoccupied with architecture?”

“Mostly, they’re preoccupied with women.”

“Well, of course apart from that.”

“You mean sports? Don’t tell me you’re a sportsman!”

He laughed. “I, sir, was a ‘pro.’” I looked at him with something like awe, and he laughed again. “I thought as much.”

“Somehow, I can’t picture you people playing sports.”

“But why not?”

“I don’t know. You seem so . . . serious.”

“But what can be more serious than having fun?”

“I mean, intellectual.” I was trying to imagine all these bubble people spread around a baseball diamond, and the thought struck me funny. “I’m sorry,” I said as St. Peter caught me laughing.

“You needn’t apologize,” he said with his smile-exclamation mark. “I realize that with you, who are half unfortunate, sports seems a rather frivolous pastime. But you see, we have no dichotomy between our bodies and our minds; and we do not look on sports as you do, as something *merely* physical.

“And of course, even among you, sports is more mental than physical. You train your bodies so that they will become the perfect servants of your minds; so that they will be able to perform instantly extremely difficult feats of dexterity, simply when you will it. Sports are a supreme illustration of the extent to which one’s mind can have control over one’s body. It is the same with us, except that we seem to be somewhat more aware of the implications of what we are doing.”

That hadn’t occurred to me, because of our prejudice of looking on football players and basketball stars as near-idiots; but they did insist that the difference between a great player—or even a great day with one player—was mental preparation,

not physical strength or even native skill. Perhaps they looked stupid to intellectuals like me because they were diverting the channels of their thoughts to making their bodies obedient slaves rather than to how to perform triple integration. Judging by my own singular lack of success in sports endeavors, this probably took a lot more mental effort than I was willing to devote to it.

“We consider sports a special form of art also,” said St. Peter, and that sent me off on a new train of thought. Wasn’t it really the case that what gave us the pleasure of watching games was that we knew how hard it was to do the things we saw these people doing with grace and ease?

“I imagine your sports are quite a bit different from ours, though,” I said.

“Yes,” he said. “Would you like to see a match?”

“You couldn’t keep me away!”

He then took me to a part of the city where I had never been before, and on the way began explaining the principle of the game I was about to witness. Like everything else on Acosmia except their government, it was complicated in the extreme, and I won’t even try to reproduce his explanation of it, which was completely bewildering. I will simply give you my own impression of it, leaving out all the niceties and subtleties of strategy and so on, which he stressed as “of course” the real point.

We entered a building which was the closest approach to a cube of any that I had seen in Acosmia, with a little niche in three of the walls for spectators. All six walls had a grid of twelve squares drawn on them, which if they were colored in would have made the inside of the room look as if it were lined

with chessboards. The squares were close to two meters on a side, so that whole was twenty-four meters or so square. There were perhaps three or four meters of wall left on all sides around these chessboards. Imaginary lines drawn from the boards on one wall to the wall opposite defined little cubical cells in the center of the room. These imaginary cells were the playing area.

Each team had twelve players—of course, without uniforms, since no one wore clothes in Acosmia. You simply had to know which people were on your team and who made up the opposition.

In the beginning, the twelve players on each team were lined up opposite each other against the cells that were the “home” cells, as in a kind of three-dimensional checker game. Apparently, the object of the game was rather like chess, to remove all the members of the opposing team from their cells, with only one person remaining, who represented the winning team.

The game was also like chess in that each position on the team had certain moves that were permitted and certain ones forbidden. Some players could move diagonally but only in a horizontal plane, some in a straight line but only horizontally or only vertically, and so on. It was the permissible moves that got really complicated. And, of course, you had to simply remember which player started out in which position and what moves were associated with that position; because once he was out of his home cell, there was nothing in his appearance (like the shape of a knight or a bishop) that told you what he did—or, as I mentioned, even what team he was on. The captain was like the queen in chess (there was nothing corresponding to the king); he could move anywhere in any

direction.

One of the captains had a kind of a ball, about the size of a soccer ball; and the game began when he threw it (by cupping himself into a kind of jai-alai scoop) to the other team.

At this toss, everyone on both teams was allowed to assume a strategic position, and immediately, for me, the game became total confusion as far as playing strategy went. Once this was done, however, only the person with the ball could move. He had the option of either moving, carrying the ball with him—according to his permitted moves, of course—or throwing it to another member of his team, who could then move.

They could pass the ball with enormous speed, so that you almost couldn't see it, and usually tossed it back and forth for a while, the way the infield does in baseball sometimes; and then someone without warning would grab it and zip across the playing area. During this passing period, the members of the opposite team would try to intercept the ball; but they were not allowed to move out of their imaginary cubes. At one point, very early on, the game was stopped and one of the players removed by one of the six referees, who kept swimming up and down in the area behind the playing cells along each wall. The player had stepped out of bounds, and was out for the remainder of the game. St. Peter said that it was inexcusable at this stage. "Later, when the field is tighter, perhaps; but he just wasn't paying attention."

Considering that the cells were like the strike zone, imaginary, and that they had to keep track of where they were as well as where everyone else was, it was a good thing that Acosmians had a couple hundred eyes; they needed all of them.

At any rate, when the person who had the ball moved with

it, what he tried to do was move into the cell of some unsuspecting member of the opposite team and knock him out of it, at which point, the other member would be “out” and the field would be narrowed down by that much. No two players could remain in one cell. Most often, the attacked player was aware of what was coming, and deflected the attacker by making the smallest of rushes back at him at the last instant; and the cell that the attacker landed in was then “his,” and he threw the ball to someone else. He was often knocked out of the playing field, in which case, he took up his original position, and the ball went to the captain of his team—and there were other complicated arrangements.

It often happened, however, that the defender of the cell was not alert enough to repel the attack, or the attacker simply had too much momentum, and the defender lost his cell, and was “out.” The attacker had to be careful that he didn’t overshoot when he knocked out the defender, or he would lose possession of the ball, which then went to the captain of the other team—though the attacker retained the cell of the ousted defender.

Sometimes, neither one was knocked anywhere, and both began struggling fiercely for possession of the cell. In this, the game was much like a wrestling match, whose object was to grab the other person somehow and fling him away. This they did with enormous force.

If I have given the impression that the game was rather violent, the impression is nothing to what it appeared to me as I watched it. First of all, it was so fast that I couldn’t follow it at all. The ball would be flying from one to another with the speed of a racquetball, and the people all seemed to be moving

at once, even though the only one who could move was the one with the ball. And when they crashed into each other! Acosmians went flying all over the place, and splattered into the walls like so many lumps of jelly—after which they peeled themselves off and retired to one of the niches to watch the rest of the game. It was the best evidence I saw that they couldn't be harmed against their wills; any earthling that played a game like that would have been hospitalized for months afterwards, and the whole field would have been a sea of blood within minutes. Even the spectators had to have their wits about them, because one had frequently to dodge some body headed toward the seats. St. Peter once acted as a shield for me, and deflected a player who would have knocked my head off; in fact, St. Peter's block was so good that the fellow was knocked right out through one of the openings (the walls of the cube, of course, did not meet) and only came back about three minutes later to take his place in the stands beside St. Peter and ask him when he was going to return to the team.

Finally, after all the carnage, only the captains were left. I never discovered whether the game was to get rid of the opposing captain or all the members of the team. Whatever the reason for their being left to the end, the captains were not captains for nothing, since they had been under constant attack, and had inflicted more mayhem by far than anyone else. In any case, as soon as the last player except the two captains was hurled from the field, the one with the ball rushed head-on into the other, who had all his eyes trained on him, and met a brick wall. There was a struggle that must have lasted five minutes, with the ball occasionally escaping and being grabbed by one or the other; and finally, the blue-green captain

managed to get some special grip on the purple one (a grip St. Peter described to me with admiration at its finesse) and was hurled to the wall opposite us with such force that he remained against it for a full twenty or thirty seconds before recovering his shape.

Then all the members of both teams rushed into the field and bumped against each other, which I gather was the equivalent of a “high-five” or something, and the spectators began to disperse, discussing the fine points of what they had seen.

“Did you enjoy it?” said St. Peter. “I used to be on the team that won.”

“I don’t know what to say!” I said. “And you, such a gentle, peace-loving people!”

“Yes. Well, it was all in fun, of course. We have other games that are not quite so violent; but I like this one best.”

“It’s certainly quite a game,” I said. “Look! There’s Mike. I didn’t know this was where Newton lived.” We were by this time out in the street.

“I see,” said St. Peter. “I suspected as much. Paul, I am afraid that you have a problem I do not know how to handle. That person with Michael is not Newton; Newton does not live around here. That is (and he made some shapes); and he is one of the unfortunate people.”

Twenty

I decided not to confront Mike (who hadn't seen us) then and there, but to wait until we got together at the ship, because it was our period to be awake at the same time. I didn't feel much like talking to St. Peter afterwards, least of all about sports, and after some expressions of sympathy on his part and some attempts at politeness on mine, he took me back. It was nearly time for me to come in anyway.

Michele got in shortly before Mike, and asked what I had seen, and I told her a little about the game I had witnessed. She expressed mild amazement, but was dead tired, not having had much sleep while she was watching over me, and so went straight to bed without even recording her report.

I thought of ways of broaching the subject of his companion to Mike, none of them satisfactory; and when he did come in, I simply said, "I saw you off at a distance today with somebody."

"I've been meaning to tell you about him, Paul. I call him Galileo."

"Why Galileo?"

"Well, he's one of the ones they call unfortunate people,

and”
“My God, Mike, do you realize what you’re doing?”

“What do you mean?”

“Getting involved with those people! How did you meet him?” “Oh, come off it, Paul! Everybody acts as if the unfortunate people were something sinister, waving cloaks in front of their faces and twirling their moustaches! All they are are people who want to know things that the rest of these clowns won’t have anything to do with, that’s all. I met him because I went looking for him.

“In fact, if it’s any comfort to you, I asked Newton about these people, and if I could meet one of them, and he didn’t stand in my way at all. He said that they didn’t share the faith that most of the people have, and I said I knew that, and I didn’t either. Then he told me about this guy, and said he might not have anything to do with me, but he was probably the most intelligent of all of them, and would be my best bet if I wanted find out ‘the other side of the issues we disagree on,’ was the way he put it. Then he gave me his address—this was four or five days ago, and I went over.

“He wasn’t outside; apparently they never are, so I just went in, and there he was. He’s a beautiful dark maroon—oh, I forgot, you saw him. Anyway, he looked at me, and I handed him our coin. He seemed a little surprised that I wasn’t some kind of animal he’d never seen before, and when he’d read the coin, he came back and said to me, ‘Should I be bothered with you?’”

“I said, ‘Suit yourself. I’m just trying to find out all the sides of what’s going on up here.’ He laughed, and then said, ‘I think I just might. It would be interesting to see if lower forms of life can actually learn something worth knowing. Besides, if

your name means anything, then you've come to the right place; I can give you some "doubts and questions" instead of all the answers I'm sure you've been getting. But I warn you, everyone here thinks I'm evil, and is certain to believe that I'll be a bad influence on you."

"Well, don't you think that they just might be right?" I said. "Mike, these people could be terribly dangerous!"

"How? What'd he do, brainwash me? Hell, when it comes to that, I'm already brainwashed, from your point of view. You all swallow all of that crap about immortality and stopping changing and the Awesome Friend and you never bothered to find out if there were any *facts* or not on the other side. Well, suppose he convinces me; then we're in the same position we're in now, and what difference does it make? It's just that I'll have some data you couldn't have got any other way, and we'll know that much more, whether you agree with it or not. Look, I'm not blaming you—or St. Peter or Cleopatra or Newton or anybody. They have their faith, and you respect it. Fine. So do I; I just don't buy into it the way you two seem to have, that's all. I'm not going to do them any harm—and if they're right, I can't anyway. What's the problem?"

"I don't know, Mike; but it makes me nervous as hell! And if Michi hears about it, there'd be a storm like you wouldn't believe!"

"Well, she'll have to hear about it sooner or later, I hope—but maybe I'd better leave that up to you. For now—"
 "Well, what's done is done, I suppose."

"Anyway, what I've found out is plenty! First of all, this Galileo has a completely different approach to physics, which I'm trying to get a handle on. Newton's is really fascinating,

but this is—I can't describe it. The guy's really brilliant, even for these people.

“But more than that, he's skeptical about all this immortality stuff, and he's done some testing to find out about it. Did it ever strike you as odd that there's only one artificially lighted place on the planet, that it's lit with white light, and that this is the place everyone goes when they decide to ‘stop changing’? And the only thing anybody knows, really, is that anybody who goes in there never comes out again.”

I looked at him aghast. When you put all those things together in that way, it did look as if there was something wrong here.

“Now put *that* together with what we happen to know about plastic, and how some plastics are harmed by light. These people are made of a very complicated and almost certainly a chemically very delicate plastic; and they go into a room full of a brilliant white light, which for all we know has a lot of ultraviolet in it, and possibly even X-rays. And they never come out again. Now tell me; if you had any doubts about whether what they believed was true, would you be anxious to go into that room?”

“I see your point.”

“So one day when nobody was around—which isn't easy, as you know, because there's almost always somebody floating around that church—Galileo decided to try the obvious experiment. He says he got one of the little animals, and put it into the room, and it never came out. I asked him if he was sure the animal just vanished in there, and he said he waited a long time, in fact until somebody else came into the building, and it didn't come out; but he wasn't about to go in looking

for it. He says it *could* have been hiding in there or have gone to sleep; but he doesn't believe it. In that sense, of course, he didn't prove anything, but it was enough for him—especially when I explained about plastic on earth and light.

“One thing's sure; it didn't stop changing, because animals die. There's got to be some high-frequency radiation in there that just disintegrates plastic to dust.”

“Good God!”

“You see how it helps to get the other side of a story? Of course, Galileo could be lying, but why would he lie to me? And if he was lying, why didn't he make it more convincing, like telling me that he put the animal in there, and saw it melt or something.”

“But that means that when a person decides to stop changing, he just goes up to that room and commits suicide without realizing it until it's too late!”

“You're getting the idea.”

“But why doesn't he *tell* them, for God's sake!”

“He has. He's tried and tried. But of course they won't listen, because they don't believe it.”

“But why doesn't he tell them repeat the experiment for themselves?”

“He has, of course. But they won't do it. First of all, this would be to cast doubt on what they believe, and secondly, it would possibly harm an animal; but most of all, it *might* be an indirect way of exploring the constitution of their bodies, and that's forbidden. And then he says that they claim that animals are different from people and what happens to an animal proves nothing about what happens to the people who stop changing. You see how hopeless it is when you're determined not to let

evidence bother you.”

“But that’s terrible! Terrible!” I pictured St. Peter swimming innocently into that room and suddenly finding himself melted into nothingness by the radiation. “Terrible!”

“And imagine how Galileo feels. Imagine what it’s like to have some knowledge that could save the whole population from a horrible fate, and no one will listen to you, no matter how hard you try to convince them. The harder you try, the more they think of you as evil and to be avoided. No wonder they call them unfortunate!”

“ . . . I can’t get over it!”

“And he *wants* to help them, Paul. They just refuse to be helped, and there’s nothing he can do. And he knows a lot more, too; but nobody will listen to him, no matter what he says. He’s one of the unfortunate people, and even the harmless knowledge he has they won’t pay attention to, for fear it might somehow be contaminated by his forbidden investigations.”

“Say, wait a minute! How about the darkness? How does he explain that, if there’s no Awesome Friend and all that?”

“Believe it or not, there’s a simple explanation even of that. I was there when the darkness started, and he said ‘I had a feeling this was going to happen. They’re afraid someone might leave with you, and might learn forbidden things on earth; so they’ve issued their “call,” and it will be a prohibition not to leave the planet.’

“And that’s what happened, of course. Then I asked him how they made it dark, and afterwards he showed me a chemical he’d discovered that you get from some plants that don’t grow around this area. He poured a little of it out; it

forms a black precipitate when it reacts with hydrogen, and if it's concentrated, it just spreads out as it falls, and darkens everything above it until it gets so far down that the shadow goes away. The little that he spilled made a shadow around his whole house for a minute or so—but of course it was only a few drops.”

“But who are *they*?”

“The priests, of course. And they did it because they thought it might be dangerous for anyone to know too much. Galileo is convinced they're all sincere, even the ones who're in on the secret. He says they probably figure that life is so comfortable here, why foul it up with the knowledge that it's not really all roses.

“I agree with him on this. I mean, life certainly wouldn't be *easier* for the people here if everybody knew what he knows, because they'd have to face death just like we do. But personally, I'd rather live a hard life that was consistent with the truth than be comfortable and ignorant. Everybody's well-intentioned here, and Galileo's the first to admit it. That's one of the things I admire him for; he has absolutely no bitterness toward them, just a great sadness. But well-intentioned or not, what they believe is lies.”

“The poor guy,” I said. “I wish we could do something for him.”

“But we can, Paul! We can give him some people who need help and are willing to accept help from him!”

“Who, us?”

“Us and everyone else on earth.”

“Now wait a minute! He can't come.”

“What do you mean, he can't come? Because they're forbid-

den to come? He doesn't believe in those prohibitions. He wants to come, I know; he kind of hinted at it, but he never came right out and asked me, so I finally asked him, and he said Yes, if we'd all agree to take him.

"He could do so much good on earth, Paul! You should see the mind he has! If there's anybody who can get us out of the messes we've gotten into, he's the one. I mean it."

"But he'd die in an atmosphere of oxygen."

"No he won't. We thought he might at first, but we tried it with an animal, and the animal went into convulsions at first, but recovered, more or less. After a while we took him out, and he was a little sick, but he seems okay now. Anyway, the next day Galileo said he'd try it himself. I didn't like the idea, but he has real courage, Paul. He said, 'If I die, I die, and you can use my body to prove to them we do die,' and he went right in.

"As we let out the hydrogen, he began to feel sick, and then when we got inside, he zoomed up to the ceiling and threw up all over it. I should have expected something like that, because he was still half full of hydrogen gas; but my heart stopped, I can tell you."

"So that's where that stain came from."

"Right. Anyway, when the hydrogen got replaced with oxygen, he came down again—but he was drunk! You should have seen him! He was laughing and going all up and down in waves—there's no way to describe it—and doing really stupid things. He didn't even know where he was for the first fifteen minutes or so, but he sure seemed to be having a good time—and for once I was smarter than he was."

I was shocked. "But my God, Mike! We can't take him if he's going to be perpetually drunk! Anyway, he must not want to

come now, does he?”

“Oh, he likes it—and he says it wears off in a while. He had a—I suppose you’d call it a headache—afterwards, except they’re all head in a sense. He’s been pestering me to get back in here, in fact. He claims it’s the changes that make him feel bad. But you should have seen him, Paul! He reminded me at first of that blouse of Janice’s on the ceiling, remember—except that I was so scared he’d killed himself.”

I decided to seize the opportunity. “By the way, did you ever know Janice before that?”

“Janice? Yeah, I’d been out with her a couple of times. Well anyway, Galileo and I spent an hour or so inside here, and I let him examine me. He’d never seen me without my space suit on, of course, and he was interested in what we were like.”

“When was this?”

“The day before you said Wordsworth wanted to come with us. I thought that that might throw a monkey wrench into everything, but—”
“No, I mean about Janice. When was it you first met her?”

“What’s with Janice?”

“I’m just curious. She seemed to know you pretty well.”

“She thought she did. But she thought she knew everyone pretty well. Let’s see . . . I met her at whasisname’s house, the wheel that used to be the head of NASA, what was his name? Carlisle, somebody Carlisle. Anyway, I was there at one of his parties, and she came up and claimed that she was a big friend of his. I was new in Washington at the time—it was just after we first got there—and I was impressed. Later, I found that he didn’t even know her; I imagine she’d crashed the party. She was stupid, but she knew how to push, all right! She talked me

into getting her the job with us, in fact, now that I think of it.”

“Oh, she did.”

“Wait just a minute here. There’s more than just curiosity in all of this.”

“Well, it turns out that she knew some other interesting people, according to Keith.”

“I wouldn’t put it past her; she’d get to more than just know anybody who’d let himself within ten feet of her. I suppose they think she was a spy. Paul, all she was was stupid. You saw her. I mean, she wasn’t playing stupid, she was *stupid*. She was a refreshing change from the intellectual atmosphere around the lab for a couple of days, but a couple of days was all anybody could take of Janice. If she was a spy, she’d have been looking for information, and that would mean she’d have let you get a word in edgewise every hour or so.”

“It seems that at least one of the people she knew was the guy that inspected the skin of the first stage, and that ‘asteroid’ that hit us was apparently some kind of heat-activated plastic explosive.”

“My God!”

“But you don’t really think that she had anything to do with all of that?”

“I don’t see her recruiting anybody, if that’s what you mean, and anybody who’d use her for anything that wasn’t absolutely elementary would be an idiot. I don’t think she’d be too dumb to stick that explosive on the ship without blowing herself up, because she had a very well-developed sense of self-preservation; but beyond that, it would’ve been hopeless. Maybe they did get her to try to steal one of those reducers; but you saw what happened as soon as her blouse did something funny. If

she deliberately took it, then the first thing she does is lose it, and the next thing she does is call me to get her blouse down off the ceiling so she can watch her program.

“In a way, it’d be neat if this was what happened, because I’d like to see the face of the guy that got her to take the thing in the first place when she told him—and she’d have told him, all right!”

“What I can’t understand is how you could’ve gotten yourself mixed up with somebody like that.”

“Oh, well, you know how those things are. I was feeling pretty low at the time, and she was all full of life and bounce, and if there was one thing she didn’t have, it was wit.”

He suddenly reddened, and then said, “But like I say, a little of Janice is enough for a lifetime. I couldn’t wish a better fate on Keith than to have him cultivating her, trying to find out what’s on her mind.” And he burst into laughter at the thought.

I let on that I didn’t notice his little lapse into candor, and let the conversation revert to Galileo. I must say that Mike made a very convincing advocate, the more so now that I was relieved of my suspicions about him, if for no other reason than his touching attempt to conceal his real reason for being acquainted with Janice.

We agreed, however, that Michele would have to be brought into the discussion, and would have to be approached very carefully.

Twenty-One

"**A**bsolutely not!" said Michele. We had approached her very carefully, and she had even agreed to hear us out before she said anything. She had listened to us for almost a half hour, and without any anger or vehemence, had simply put her foot down.

"But why?" said Mike.

"That prohibition was given for a reason, and if there's a reason why nobody should come back with us, there's bound to be a lot better reason why we shouldn't invite an evil person."

"Oh, for God's sake, Michele!" said Mike. "He's ~~not~~^{not} know, I know; you've been telling me for the past twenty minutes. But he breaks their laws. How do we know if he'd obey ours if he were to get there? And what do we do to him if he doesn't? I don't like any part of all this."

"I don't really see how he could do us any damage," I said. "If he tried something, we could just lock him up."

"How do you know it'd be that simple? We don't really know very much about these people at all, Paul. But that's all beside the point, as far as I'm concerned. Even if it were

Cleopatra who wanted to come, I'd be against it, because I will not be a part of any violation of their religion."

"But for God's sake!" said Mike. "You don't—^{Exactly.}" For God's sake. And you needn't yell."

"I'm not yelling! Don't tell me *you* believe that crap! I explained how it was done."

"You explained how it *could* be done. That doesn't prove it *was* done that way."

"Well, would you mind telling me how it *was* done, then?"

"How should I know? What's wrong with saying the Awesome Friend did it? Frankly, I find that easier to swallow than that a bunch of priests got together and emptied gallons of magic liquid into the ocean just so one of them could preach a sermon. Why wouldn't they just tell Caesar?"

"But Michele, show some sense! It's all tied up with that immortality crap, and no sane person who knows anything about the laws of nature—^{Now just}" a minute! Just a minute! Do you realize that you're calling practically everybody here insane, not just me? And not only that, you're accusing the greatest thinkers on earth, including Einstein, of not knowing anything about the laws of nature? From the way you've been struggling with what they've been teaching you, you're the last one to claim that you know more about the laws of nature than anyone else. Who are you to say that immortality is impossible?"

"But it's obvious!"

"It is *not* obvious. You would have said—in fact, you did say, several times while I was studying exobiology—that life up here on Jupiter was impossible, and I'm sure if you'd thought of it, you would have said that living beings made of plastic would

be impossible. The world is full of things we don't know and that look impossible just because we haven't had experience of them. This could be one of them."

"It could be, but it isn't."

"How do you know?"

"How do I know? How do I know you're here and I'm not dreaming? I wish I were! Michele, you *can't* believe that stuff! That they just decide to stop changing, and poof!"

"Look, I'm not saying I believe it—as it happens, I do, but that's irrelevant. Whether I believe it or not, they do, and it's their religion, and even if I didn't believe it at all, I still wouldn't do anything to violate it, any more than I'd kill a cow in India."

"I give up!" he practically screamed. "Paul, I told you at the beginning of this debacle that we should never have brought a woman along with us! Right from the beginning, she's been nothing but trouble! And now, when we have a chance to bring to earth what'll be the greatest boon to mankind since the wheel, she'd keep us in the Dark Ages out of sympathy for somebody else's religion that she doesn't even really believe in, for God's sake! And she admits it!"

"Now wait—"
 "Don't talk to me! I should've known better than to try to reason with a woman! Of all the damn-fool things you've ever done, Paul, this was the damn-foolest! Frankly—"
 "Okay, Mister, you asked for it. Shut up!" she cried as Mike opened his mouth to speak. There were tears in her eyes that she was fighting back. "I am sick and tired of hearing you talk about women! Who was the one who let one of the mass-reducers out of the lab? Not me. Who was the one who got sulky and almost made us cancel the whole trip? Not me. Who was the one who nearly

killed himself as soon as we got here? Not me. Who got himself mixed up with that floozy and has the Secret Service running all over the place trying to find out if we were spied on or not? Not me. If Paul hadn't thought of pretending that the blouse was stuck up on the ceiling by static electricity, she would have blabbed all over the place what we were doing. And who went out with her in the first place? Not me. And who deliberately got himself involved with the only bad element in this society, just to find out what they're like? Not me, brother! Who insults people to their faces, and then goes off in a fit of the peeves for days on end because somebody gives as good as she gets?

"There's been one person who's been causing all the trouble on this trip, and it hasn't been me! And now you have the gall to call *me* a troublemaker and stamp your feet and act like a three-year-old because I happen to be willing to see both sides of an issue, and you won't! Well, I've had all I can take of all of this and more! I am fed up! I am tired to death of handling you with kid gloves—"

"Yes, kid gloves! You've had us all tippy-toeing around here for three weeks, just because *you're* so sensitive! *You* can say anything you want, and *me* have to swallow it, because *you're* a minority and can do no wrong; but let us open our mouths and you talk about committing suicide! I am sick of it! And I'm telling you this, brother. First of all, I don't happen to care if you're Caucasian or Chinese or Black or what, in case you want to know, and if you don't believe me, you can go to hell. And secondly, if you try to get that Galileo on this ship with us, I'll throw him off if I have to die trying! I am not going to put the whole world in danger just because you think it might

happen to advance science!”

There was a pause, and Mike said, “Are you through?”

“Yes, I’m through!”

“Well, so am I. I am so through! Thank God ~~Jesus~~,” ~~okay~~, okay, you two,” I said. “You’ve each said your little say and you’ve got your feelings off your chests, and you’ll both be sorry for it later—just shut up, will you? The fact is, we’ve got a problem here, and nothing that’s been said in the last ten minutes has got us anywhere, but it’s just possible there’s a solution. Michi, you don’t want to be a party to any violation of their religion, right? Isn’t that your main reason for not taking Galileo?”

“It’s my main one. There are others. ~~That’s~~,” ~~okay~~, but let’s tackle this one at a time. Now Galileo doesn’t believe in their religion, and apparently thinks he’s got good reason for not believing, and so he’s not violating his conscience if he comes with us—now wait a minute. And we don’t know whether the other people here feel that their religion creates any obligation in them to try to prevent someone from violating the prohibitions they believe in. Judging by the fact that they’ve let Galileo alone so far, it doesn’t look like it. So we might not be violating their consciences either if we took Galileo with us.”

“But that’s not the point!” she said. “In the first place, we don’t *know* that. ~~And—~~” ~~Granted~~, but there’s an easy way to find out. I’ll just ask St. Peter; and if he says they’d find it against their religion to take him, the matter’s settled. We don’t take him.”

“Now wait a second, Paul.” said Mike.

“Nope, Mike. In this, I’m with Michi, if for no other reason than that it might be a good thing to come back here some

day, and we wouldn't want a whole community of these people hostile to us."

"~~But~~ Sorry," but that's the way it is, Mike. But if St. Peter says that as far as he and his friends are concerned, they have no objection to our taking Galileo, then we're not doing anything against their religion, and on that grounds, you have no objection, Michi."

"I said that wasn't the only reason. Why was there a prohibition in the first place? Whether the Awesome Friend gave it, or whether the priests did, both of them are a hell of a lot more intelligent than any of us are, and I simply refuse to believe that they're engaged in some kind of a power-grab and scheming to keep the people in the dark. Either they or the Awesome Friend see a danger that we can't see—but I can sure guess at!"

"Well, I'll discuss that with St. Peter too, and see what he thinks."

"But he's *bound* to be biased, Paul!" said Mike. "You know that!"

"I'll take it into account. What harm can it do if I talk to him? We're at an impasse now, especially if Galileo himself won't come unless we all agree to take him—which is what you said, I think."

"Well I did, but—you know how these things are."

"Okay, then. Personally, I don't see how he can do much damage to us; he can't *make* us do anything. If he could, we'd all be agreeing to take him now. He can *tell* us to do things, but we don't have to listen. After all, most of the most brilliant people on earth weren't listened to during their lifetimes. If he thinks that reasons are going to convince us on earth, he has some learning to do himself—but that'd be his problem. But

there's plenty of ways that a fresh approach to science and to some of the difficulties we've got ourselves into could do us a lot of good; so there's good reason for taking him, if St. Peter doesn't see anything against it. All right, Mich?"

"I still don't like it," she said.

"But you wouldn't really stand in the way if St. Peter said that it seemed all right for us to take him."

"I don't like the whole idea at all."

"I know that, but would you veto it against St. Peter's judgment?"

"Well, no, I suppose, if he thinks it's all right. But it still seems to me that we're letting ourselves in for a lot of trouble."

"Remember, he probably knows more about the people on earth by now than the three of us combined. He's making us his life's work. And he certainly cares about us. He's not going to give his blessing to something that could be disastrous."

"All right all right. If he says Galileo can go, I suppose he can go. But I just want nothing to do with him."

"No problem," said Mike. "We can keep him in the first stage out of sight."

St. Peter anticipated me when we met, and said, "I presume Michael has been attempting to persuade you to take (he made a series of shapes) along with you to earth."

"We call him Galileo," I said.

"A singularly appropriate name, under the circumstances. Have you decided to take him?"

"How did you know he wanted to come?"

"Well, it seemed the obvious reason for his associating with you. He is not precisely renowned hereabouts for altruism,

Paul, and Michael, though he is intelligent as earth people go, has very little to offer him by way of companionship. But he might be a means to escape what Galileo considers a hateful existence. Considering the difficulties involved, it would require strong motivation for anyone to leave here; but he has very little to lose, I would think, by doing so, and possibly much to gain.”

“Well, anyway, we can’t make up our minds whether or not we should let him go with us. We did decide this much, though. We absolutely won’t take him if we’re violating your religion in some way by doing it. So I said I’d ask you about it.”

“I see. That is unusually considerate of you, in view of some of the things that people on earth of one religion have done to those of other religions. But you may set your minds at rest on that. If he wants to go with you, of course he himself will be violating a tenet of our religion; but since he does not believe in it, then that is a matter to be resolved by him.

“And as far as we are concerned, there is no command to force or even try to persuade anyone—except our own children, of course—to obey any injunction laid upon us. We would never cooperate in an act of disobedience; but if someone wishes to disobey and is not ignorant of the command, we would put no obstacle in the way of it.

“And since you people are not bound by our commands, there would be nothing against your cooperating with his violation of the law, if you saw fit to do so. So as I say, you may set your mind at rest on that.”

So he had set my mind at rest. If only he had! How simple it would have been if he had said, “I am sorry; we cannot allow

anyone to leave.” Then everything would be settled. Now it was still up in the air.

“But you are not satisfied, I perceive. I suspect that you would like to have me tell you what I think you should do.”

“If you would be so kind.”

“Oh, no, Paul; it would be anything but kind. It would allow you to escape accepting responsibility for what must necessarily be your decision, and for which you three and you three alone are responsible.

“However, I do see that you are emotionally troubled, and perhaps cannot see the facts clearly. I can do this much for you; I can lay out the facts for you as I see them, and you can take into account any bias I might have; but I will be as objective as I can.”

“I’d certainly appreciate that.”

“Well, in favor of his going with you, there would be certain benefits to him. I am assuming that he would not find living in oxygen noxious.”

“Mike says he gets drunk in it at first, but he seems to think he’d get over this.”

“I suspected he had probably tried the experiment already. If that is the case, then when on earth, he would be among people who—he thinks—will listen to and respect him. I rather think he is at the moment judging all earthlings by Michael, and he might very well be brought up short once he confronts the people down there, who, unless I miss my guess, will be apt to regard him as a threat or if not as someone to be despised simply because he is foreign—even Michael does that. Of course, he will not have the language problem that most foreigners have, nor will he speak with a foreign accent; so he

may be able to overcome much of this. But he will 'look funny,' and this can be a severe drawback on earth, if your treatment of handicapped people is any indication.

"Nevertheless, if he solves some problems like that of hunger and pollution—and especially if he manages to remove that Damocles sword of nuclear weapons, he could probably win respect and even adulation, however grudging. And grudging respect would probably be preferable to the kind of pity he receives here. So on the whole, I think he would be better off if he went with you.

"From your point of view, the advantages in his going are that his intellect could save you from many of the scientific blind alleys you are so relentlessly pursuing at the moment. Secondly, there are numerous material advantages you could anticipate if he were there helping to solve your problems. The technical side of solutions to world hunger, environmental dangers, and so on, would be simple for him to resolve; there is little question that if he were listened to, the whole of the earth could live in the state of affluence that the prosperous among you in the United States enjoy now.

"Of course, so many of the problems you have are political and interpersonal, not technical; and those are much more difficult. I suspect, however, that he could learn practical diplomacy rather quickly, which seems to be the art of making each party think that the negotiator's ideas came from itself, and that 'the other side' has given in. He would probably be able in a year or so to write a democrat's version of Macchiavelli's *Il Principe*, and 'you would not know what hit you,' as I believe the saying is. I think even nuclear weapons might be a thing of the past after a short time of Galileo on earth. So in

that respect, there are enormously cogent reasons for your taking him.

“On the other side, what I mainly see is a spiritual danger. The other day, earth sent up a book called *Walden Two*, which purported to be a novel, but was actually propaganda for what I suppose could be called a theory of brainwashing, where the people are prosperous and happy and doing just what they are told. The author evidently does not think people are free; and if not, then it certainly makes sense to put them in a condition where they will want to do what is for their material well-being.”

“I’ve seen the book. B. F. Skinner wrote it; he’s a behavioral psychologist.”

“I think he is totally and utterly wrong in his basic premise, myself. I do not think your perversity can be explained in terms of bad environments; I think you are free to do what not only you know is bad for you, but what you have no particularly strong inclination towards.

“But this is not the point. I think your freedom is what makes you really yourselves, since it allows each of you to define for himself what his goal in life is, without having this goal forced upon him willy-nilly by his genes or his surroundings; and the pursuit of this goal and its ultimate attainment makes you what you really are.

“Still, I think this Skinner is right in this sense: I believe it is possible, by constantly dinning only one alternative into your heads as realistic, to control your freedom in such a way that you will in fact almost always choose what you have been trained to choose. Your emotions already seem to control freedom in this way: they control the information on which

you base your choices. At the moment, for instance, your emotions make it difficult to see arguments against the position you would like to take.”

“What I’d like, actually, would be to fall asleep and wake up back at home, and have all this a beautiful dream.”

He smiled his exclamation mark. “Yes; well, perhaps I sympathize somewhat. However, I think Galileo would be able to make the earth a kind of Walden Two by manipulating you. He would be able to give you prosperity and contentment, and persuade you to do whatever he wished. And since almost all of you prefer not to be free in any case—”

“What makes you say that?” I asked.

“Surely it must be evident even to you. The freedom you profess to cherish is the illusion of freedom. When you speak of being free, you contrast it with oppression, which basically means the inability to *have* things. In reading the history of your planet, it seems that whenever the people have the things they want, and when they can say whatever they please, then they are content to be told what to do.

“Why do so many seek advice, if not to have someone else to blame when following it does not yield the results they wished? They do not want information, as I see it; they already have the information. They want to pretend that someone else has actually made the choice for them. Why are there ‘bureaucrats’ everywhere who would die rather than bend one of the regulations, no matter how reasonable it might be to do so? Because if they did this, then the choice to do it would be their own and not the responsibility of the one over them who made the regulation.

“Even those who break the rules hide behind their upbringing or their environment, or they might have to admit that the

choice was theirs. Those who refuse to seek advice seem to do so more often than not because they do not want to hear reasons, so that they can then plead ignorance and not accept that the act was theirs.

“You want to commit yourselves in marriage, but be ‘free’ to divorce; you want ‘reproductive freedom’ to make reproduction not reproductive.

“You see, what you mean by ‘freedom’ is not to choose an alternative and accept the consequences, you mean the ability to perform the act and at the same time repudiate it and its consequences; you mean by ‘freedom’ the pretense that things are not what they are. The last thing you want is to be free to make a difference in your lives or in the world.

“Even you, Paul. You would like me to make your choice for you, as I said, so that you could then say, ‘Well, this is what St. Peter said we should do; it’s not my fault.’”

“Oh, I know that if I follow your advice, it’s my decision, for better or for worse. But I see your point. That isn’t the way I’d like it to be.”

“And this is what in practice you would lose—or gain, depending on your point of view—if Galileo came among you. Everyone would be going to him for advice, and he would see to it that the advice would be followed. He would take the blame for everything, and would be shrewd enough to let those who followed him take part of the credit when things went well—as they often would. All you would lose would be your true freedom. You would still keep the illusion. I think with Galileo on earth, you would still have the kind of freedom you wish to have: the freedom to pretend that the world is what you say it is, not what you would know it to be if you but

looked. You might have less of an inclination to look than you have even now.

“The question you must decide is whether it is better to keep the possibility of *really* ruling over your lives and even ruining them, than it is to live better lives and only pretend that you are ruling them. There is the real issue.”

“Then what do you think we should do?”

“Oh, no, Paul. I am not an earthling. You are a new kind of Adam, I am afraid, you three. You must decide for the rest of those on earth whether the *value* of being free is greater than the value of prosperity, contentment, and peace. I can put facts before you, but I cannot tell you which value is greater than which other value, because there is no factual basis for such an assessment.”

“And yet we have to make up our minds.”

“Yes, at least you three are free now. Really free. And what you do will affect the whole future of the earth.”

“We don’t seem to have done anything worth while with our freedom so far—if Skinner is wrong and we actually have it,” I said, musingly. “If our religion—at least the one we were brought up in—is true, we even killed the Awesome Friend when he visited us. What good has it been?”

“That is the question I refuse to help you to answer.”

“I suppose you’re right. Still, if this is the way God made us, then we probably shouldn’t give it up—if there is a God who made us. *I don’t know! I don’t know!* Why do I have to have things like this thrown into my lap? . . .

“St. Peter?” I said after a while.

“Yes?”

“Galileo, you know, doesn’t believe that you’re immortal.”

“Yes, we know that.”

“He says that when you go into that room to stop changing, you disintegrate.”

“We know he says that also.”

“But he says he can prove it. He says he put an animal in there, and it vanished. Animals die. And we know that plastic is harmed by light, especially high-frequency light, which that white light must have.”

“I see . . . Your problem is somewhat more complex than I had anticipated. You seem to have evidence that our faith is a delusion.”

“Well, pardon me, but it does look that way. Maybe Galileo is only trying to help us, the way he’s been trying to help you.”

“Well, here is a question of fact which we can test. Let us repeat the experiment with the animal. Not that it would necessarily prove anything, since if the animal dies, it does not follow that persons would die. But if the animal does *not* die, then Galileo was either lying or mistaken; and if the latter, you could test his reaction when you confront him with it. Ordinarily, I would not do anything that might harm an animal; but I think we have sufficient reason here.”

We swam off to the church, and St. Peter scooped up a small animal about the size of a puppy along the way. It lay contentedly in the little pouch St. Peter had made for it, looking out like a baby kangaroo at the scenery going by. On the way, I explained what Mike had told me about the experiment that Galileo had done, and how he had waited for the animal a long time and none emerged from the room.

As we entered the church, the light shining so steadily and brilliantly from the top glowed now with menace, which

seemed to communicate itself to the little creature St. Peter was carrying. The closer we came to the top, the more nervous it grew, and when we were within a couple of meters of the open doorway, it began to struggle and I heard some static coming over my earphones, which must have been whimpers.

“Wait!” I said. “It won’t prove anything anyway, so why should we torture the poor thing? Let it go.”

“You would let your sympathy for an animal override your desire to gain some knowledge that would help with your problem?” said St. Peter, still holding the frantic animal.

“If it proved anything conclusively, that might be different,” I said. “But even if it lives, we haven’t really learned anything. Let it go. It’s not worth it.”

“Very well,” he said, and he released the animal, which sped away as only Acosmian swimmers can speed. “You need to know what it does to persons, in any case,” he said as I watched it dart through the space between the floor and the dome, turning a deep ultramarine in the light of one of the prisms just before it vanished.

“Well,” I said, turning back, “I suppose I—St. Peter!” He had swum into the lighted room himself!

Twenty-Two

"St. Peter!" I shouted. Was he there? I couldn't see. Should I go in? I swam toward the blinding light. Would there be gamma radiation there, lethal to me? I hesitated, then activated my propulsion again.

"Well," said St. Peter, emerging as I was about to enter (the whole thing had probably taken less than ten seconds, but it would be hard to say what the time really was), "it is as I knew it would be. If I had vanished, of course, you would know that Galileo was right; but unfortunately, this experiment leaves you still with your problem, since there is still the possibility, for you, that the radiation might take a long time to work, or that the lethal rays are activated by the priest who always attends at the door—which would make it murder rather than suicide. Still, what I have done makes it rather more likely that it is Galileo who was mistaken or lying."

"You—you would have died to help me," I said.

"Oh, we needn't think of it quite in those melodramatic terms," he answered. "After all, all I did was enter a room in which I was convinced I would return unscathed. I could entertain the possibility that I might be destroyed, but for me

it was not a realistic one. I did it because I knew that if I did not, you would return to earth constantly troubled with the thought that one day I would unheedingly come here and do away with myself; and I see no reason for not sparing you that anguish.

“I think, however, that I have given you now all the help I can, except this: let us stay a while in the church, and pray that whatever course you three decide upon will be best not only for yourself but for earth and for Galileo.”

So we floated in the middle of that magnificent building for upwards of an hour; and though no revelation came, I was in a much better frame of mind for confronting the problem. I had pretty much solved it, in fact; and I was thinking of ways to pacify Mike, who would be enraged when he heard that there was no real objection, but that I had a feeling that Galileo should not come. But I wanted to hear him out first; it was only fair; and so I decided not to allow myself to make a fixed resolve at the moment.

We had still about an hour of our time outside the ship; but I didn't want to spend any more time there in the church. I felt like a person who has waked himself up from sleep with the thought of what is to be done today; further meditation was now impossible.

But there didn't seem to be much point in doing sightseeing or studying with St. Peter either, since what I now needed was to plan how best to handle what was to come; and that I could probably do back at the ship. So I told St. Peter that I thought I should return and figure out what to do before Mike and Michele got back.

Oddly, none of the Acosmians was around the ship. Perhaps the transmissions had ceased early, I hoped—or perhaps, and more likely, there was a new difficulty with the radio. We had experienced a problem because the radio had been on so long, and some of the transistors had failed, creating enough static that it was impossible to hear clearly; so yesterday, we had hooked up the laser receiver to the original high-gain antenna. Maybe the connection had gone bad too.

As I entered the ship, I noticed a strange odor; and when I got down to the cabin, I was confronted with a mass of twisted metal that used to be the laser receiver.

The full impact of what had happened did not dawn on me at once. One of our instruments had been destroyed, and that enraged and frightened me. The navigational computer, to one side of the mess, didn't look right either; and I pushed a couple of buttons without quite realizing what I was doing—and nothing happened.

I felt a sudden shock.

I pushed more buttons, and nothing I could do elicited a response.

Frantically, I moved about the cabin, checking the other instruments. Everything else seemed to work. I went back to the navigational computer. Nothing.

I sat down in my seat. We had a perfectly operational ship, except for two things: we could no longer receive any instructions from earth, since the radio receivers had too much noise (though we could still transmit, I discovered by trying it out), and we could no longer perform the complicated calculations that would guide the ship in space. If we could have flown back

to earth by sight or by the little computers that each of us had, everything would be fine; but that was simply out of the question. We were stuck on Jupiter until our food and oxygen ran out.

I must have sat there a full half hour, though it seemed only a minute or so, unable to think. Eventually, I lifted a heavy arm, and pulled over the communicating transmitter, and typed a very disjointed report to earth, informing them that we wouldn't be able to hear their reply—but pleading with them to keep sending something as long as they could hear from us, just in case we could get something fixed up. I didn't know how, but just possibly one of the Acosmians could help. But there was no metal here. Still . . .

I then discovered that I was afraid to die.

I tried to see if something could be done with the laser receiver. It looked hopeless; it was as if it had been blown up. And the computer was so complex that even if we had tools, we'd have to be lucky to—no, how could we do it? We could barely get the case off.

I looked out the window, and there were Mike and Galileo, headed for the airlock above me. Why had he done this? How had he known that I was going to refuse to take him?

I didn't know what to do, but I was incapable of doing anything anyway, so I just waited.

“Paul,” said Mike, “What are—God Almighty! What have you done?”

“What have *I* done? Ask him what's been done.”

“What are you talking about?”

“See that? That used to be our laser receiver. And the navigation computer's down. I don't know how he found out

I was thinking of leaving him, but I guess they can read minds. Anyway, we're all in for it now. We're stuck here."

"What are you saying? You think Galileo did this? I've been with him every second since I left you!"

"Hello, Paul," came a slurred version of Mike's voice over the ship's speakers. "Mike's told me a lot about you."

"You get out of here!"

"I don't understand," I told Mike. "If he didn't do it, who did?"

"That's what I'd like to know."

"You look funny," said Mike's voice over the radio. "What's happened?"

"Shut up, Galileo," said Mike. "You're drunk, and this is serious."

"Don't you shut me up, you suppurating pustule!" said Galileo, still with Mike's voice.

"Maybe you know more words than I do, but you're still drunk. For your information, we can't get back to earth if what Paul says is true; we'll be here until we starve to death."

"But then what will I do for oxygen?"

"I don't give a sweet shit what you'll do for oxygen! Now shut up and let us think!"

"I don't get it. I was sure he'd done it," I said.

"Not him; he'd know enough not to cut off his oxygen supply. Let me look. This thing blew up from inside! It's lucky it had that thick shield all around it or the whole cabin would've gone with it."

"Janice."

"Has to have been. Did she—sure. She was putting the reducers on these components, remember? The one she stole was

the gyro in here to orient the lens. *That* was why I didn't spot the discrepancy; she must have substituted a chip of explosive for the mass-reducer and walked off with the reducer! We only saw it was gone when you noticed the weight was too big; I must've seen the chip and not paid attention to the scales!"

"It could have been," I said.

"It was about the kind of thing she'd be capable of. Somebody could have got her to make the substitution; but then when she lost the chip and her blouse got light, she wasn't about to go fooling around with mysterious things, and she called me. Yeah, it fits. Great. So now we know pretty well what happened, and where do we go from here?"

"We don't go anywhere, as I see it. We just stay here until we die."

"But then there won't be any more oxygen," said Galileo.

"Correct. We're going to use it all up, unless you can figure out a way to change our metabolism so that we can breathe hydrogen and eat plastic."

"Why not? I can breathe oxygen."

"Yeah, well we're not like you. Talk to us when you're rational again."

"I'm perfectly rational. Then why don't you fix the receiver?"

"With what? There's no metal in this lovely world of yours, not to mention tools, photographic equipment, no nothing. All we've got is brains. Now leave us alone so we can feel sorry for ourselves."

We sat in silence for a while, Galileo making odd movements as if he had swallowed a tire, and it was moving up and down inside him. After a while, this movement slowed and then stopped; and I realized I had been staring at him with disgust.

Finally, he said, "You could build another receiver."

Mike looked at him. "How?" he said scornfully. "I told you we've got nothing to build it with; and even if we did, there isn't the machinery here to do it."

"Mike," said Galileo. It was uncanny, listening to Mike talk to himself; but evidently he was used to hearing his voice talk back to him. Of course, Galileo had heard no one else but Mike. "I've been trying to tell you all this time that half of the complications you get into are because of the primitive approach you people have to physics. All you need is an instrument that will convert fluctuations of one color of light into vibrations of a diaphragm, right?"

"You sound as if you're thinking again."

"I am, unfortunately. I could build a receiver like that in a day or two. But it would be work. I don't know if I'm up to something like that."

Several choice phrases were on the tip of my tongue; but we needed him.

"Besides," he continued, "if I did build you one, you'd leave, and where would I get my oxygen?"

"One thing sure," said Mike. "If you *don't*, then you'll never get to earth, and the oxygen here won't last all that long."

"I had thought of that," he said.

"You tell me what to do and I'll build it," said Mike.

"That seems fair enough."

"Come on, then, let's go and get started. Paul, I'm going to skip my rest period tonight. Until we get that thing made, we don't need to be around the ship during the blackout anyhow. I'm going up to charge up my tanks."

"Now wait a minute," said Galileo. "I just got here."

“All the more reason. You know the headache you had the last time. You’ll be better off leaving now.”

“It’s the changes. If I just stayed in here, I’d be all right.”

“I know, we talked about that, remember? Come on home. Come on. And no more oxygen till it’s finished; I don’t want the receiver singing *Sweet Adeline* to us.”

As they went up to the first stage, Mike turned back to me and said, “Don’t judge him by what you just saw, Paul; I told you he gets drunk for a while when he first gets into oxygen. He’s really a nice guy. And he’s going to save our lives; remember that. We’ll owe him a lot, Paul.”

“I know, Mike.” I didn’t like the idea, but it was true—if he did build us a receiver.

I waited up in the first stage for Michele, and filled her in on what had happened as she was hanging up her space suit and plugging in the oxygen tanks for tomorrow’s excursion. While I was at it, I did the same; I had dropped mine when I smelled the smoke and looked into the cabin.

“Well, I hope he can make one for us,” she said as she looked at the mess.

“Mike seems to think he can,” I said.

“I don’t know,” she said, picking up a piece of shrapnel and tossing it into the waste bin. “I don’t trust him.”

“Neither do I, really. But there’s the fact that he wants his dose of oxygen, and he won’t get it until the receiver is finished. And maybe he really does want to help us; it’s hard to judge a person by what he says when he’s drunk.”

She sighed. “Leave it to Mike to get us into a fix like this!”

“Now wait a minute. *This* fix wasn’t Mike’s fault!”

“Oh no? He took Janice in as lab assistant. Why would anyone take a lab assistant who didn’t know the first thing about physics and acted like such an idiot all the time?” Since any man who took one look at Janice would know the answer to that, and since I also knew why Mike was interested in someone who acted like an idiot, I remained silent.

“But listen,” she said. “I bet I know what’s wrong with the computer. The receiver overheated and blew up, because it’d been on steady for three hours. The computer didn’t, because we haven’t used it that much, and it didn’t get hot. Evidently, whoever gave Janice the explosive didn’t know how coolly these things run.

“But just suppose the heat of the explosion was enough to make some explosive in the computer melt a little or get soft and gum up the works without exploding. Maybe we can spot it and take it off. If that’s what it is, it’d be on the edge of the circuit board where the reducer was supposed to be.”

“It’s worth a try. But if you’re right, we’ll have to be damned careful, because the heat from our hands or friction might be enough to set it off.”

“It must be able to withstand body heat,” she answered, “or she’d never have been able to put it on in the first place.”

“Well, we can look anyway.”

We unscrewed the instrument panel and got at the front panel of the computer’s case. The screws here were on the inside, and my palms began to sweat by the time I got all six of them out; I had visions of scratching something and creating a spark or making enough heat to ring down the curtain on the whole voyage; there was no shield between the cabin and the explosive now.

Then we gently, gently lifted the computer a centimeter or so (so as not to slide it) and pulled it slowly out. The precautions were probably unnecessary, but who could tell? Put a dish of water on top of a plate and tell someone it's nitroglycerine, and ask him to bring the plate over to you, and watch how carefully he does it. That was what we were doing. Now I had to reach around to unplug the connection before we could turn it around and look at the circuit board. This took a good three minutes, because the connection was near where the mass-reducer should have been.

By the time we got the computer (which only weighed a couple of kilograms) out and onto the movable shelf over my seat, all my arms and my chest were in agony from the tension of my muscles, as if I'd spent an hour lifting weights.

"Well, there it is," said Michele, looking in. I went over to her side and contemplated what had once been a dime-sized disk, that had melted over the circuit board to about the space a quarter would take.

"So all we have to do is peel it off," I said, not reaching to get started.

"That's all," she assented.

We looked at it.

"Well, it's got to be done," I said finally. "Just pray that my hands are cool enough." I touched the mass with the tips of my fingers and gingerly began to peel it from the computer's board.

At first it wouldn't come. I wiped the sweat from my upper lip with my left hand, and tried a little harder. One edge came free, and it looked as if it was sticking together into a single mass.

When the main mass was halfway unstuck, I thought I'd better give it a rest, to cool down, and for me to be able to take a breath again.

"Here," said Michele. "Let me fan it."

"I think maybe you should go up to the first stage, in case something happens," I said, becoming aware of her.

"Don't be silly," she said. "If this blows up, it's just a question of how soon we die, and how pleasantly. Besides, you need me here to fan it."

I didn't, but what was I to say? The thing was to get the damn stuff off, not argue. Most of it came off all of a sudden, and Michele collected it on a little piece of paper, which we were going to take and drop out the door. There remained the problem of the few fragments that were still stuck, which might be enough to blow up the whole computer if they were left there and got hot.

For some of it, I had to use a knife, which scared me even more than digging at the main mass; but after about fifteen minutes of gentle digging under it and telling myself, "Now don't get complacent just because nothing has happened up to now," we had got off all that we could see, and nothing *did* happen.

"That looks like it," I said finally.

"Okay," breathed Michele. "Let me get rid of this."

I saw it flutter by as it went down to the incinerator in the center of the planet. If it blew up down there, as it would, it would be right at home.

It was now short work to connect up the computer again and put it back into its place. And when I turned it on, I found to my joy that it worked.

—Except that our unplugging it had fouled up its memory. It would have to be reprogrammed.

“Oh, delightful!” said Michele. “We’ve got our navigator back, only he’s forgotten everything. Why didn’t we have all this on disk?”

“Because it was on three different EPROMS. Who’d have thought that we’d have to mess up all three of them?”

“There’s no way to reprogram them from here, I suppose.”

“Not without data from earth. Nope. It’s up to Galileo. And Mich, I hate to say this, but if he builds us the receiver, I really think we ought to take him back with us. St. Peter didn’t raise any religious objection.”

“*Oh*, no!”

“I’m sorry; but St. Peter did say that he could probably do us a lot of good. He said it’d be dangerous; but what hasn’t been, in the course of world history? And this receiver will show his good faith, I think.”

“Well, let’s wait and see if he makes it.”

“Oh, sure; and I’m going to have a talk with him, too—outside the ship, so he won’t be drunk. But I thought I’d warn you; it looks as if we should take him.”

“I still don’t like it. I don’t like it at all.”

Twenty-Three

We managed to get some sleep, about four hours worth, when Mike returned with a blue plastic box, and woke us up.

“Here it is. I put it in a box so it’d fit into the space we had it in, but it’s actually only about as big as a shoe, and it’s simplicity itself—if it works. This knob here will let us adjust the frequency it’ll receive. The numbers here are different from ours, and I wasn’t sure what the color light we’re using would work out to be in their terms, so we made it variable, which is what took us so much time. Let’s try it. Are we in a position to receive?”

It turned out that we weren’t, for another hour, which we spent unable to do anything except install the instrument in its place (where its bright blue against the gray of the instruments made it stand out like a sore thumb) and stare at it.

“Couldn’t he have made it gray?” asked Michele at one point.

“Hey listen! When a guy’s saving your life, you don’t ask him if he’s got another color life jacket!”

“I wish they’d hurry up and get into position!” she said.

“—still hoping for the best,” said the receiver, the blessed, beautiful blue sore thumb, “and that Mike’s friend can manage to do what he said (we had sent back a complete report). And in case he has already done it, we’re sending this message.”

And so on. It was one of those messages of hope that didn’t really have any hope to it. I didn’t know whether on earth they thought we had been making the whole Acosmia story up and had simply been raving all this time, or whether they believed us—and I have a suspicion that they didn’t really know themselves.

In any case, I was able to type back into the communicator that everything was rosy on the receiving end, and would they please send up all the data we had erased from our EPROMS for navigation, before something else happened.

While I was sending this, there was a kind of recorded message that they sent updating us on what had been happening up to that time. They had this on constantly, like the old reports on the weather radio station, interspersed with live comments so that we’d know that a real person was still standing by.

We found out that the stuff we discovered on the navigation computer was probably an explosive, and that Janice Jones was probably responsible for it, though no one could prove anything; but those were the two instruments she had been working on the day the reducer chip disappeared. Either she was shrewder than we thought or luckier, or whoever was behind her was, because there wasn’t any evidence anyone could find to bring any charge against her.

“When we get back, I’ll bring a charge against her,” said Mike. “A strong electrical charge.”

“I wonder what she was really trying to do,” I said. “Just sabotage us, or what?”

“Somebody evidently thought that once they got hold of a chip they’d have the secret, and then we were expendable,” he answered.

“You know,” said Michele, “I’ve been thinking. We know it’s not all that simple to derive how to reduce mass from looking at a chip, but it’s possible that if you had one for a good long time, you could figure it out. Suppose they managed to get one some other way. Don’t you think it’d be a good idea to send back the information we have, just in case?”

“What do you mean?” I asked.

“Well, as far as we know, Keith and company weren’t able to steal the secret; but we know now that someone else has been trying to, and it’s conceivable they have it. I think we ought to send the information we memorized just in case—with the proviso that they won’t use it for military purposes.”

“Not a chance,” said Mike. “They’d tell us what we wanted to hear, and then use it any way they felt like.”

This led to a considerable discussion; but both Michele and I felt that we could trust Jonathan if no one else, while Mike thought that even if we could, there was no telling that someone else wouldn’t be listening in on the transmission. By this time, he pointed out, there were probably antennas in China trained on us, and our code wasn’t all that hard to break if you knew what was going on; it was only meant not to be noticed by someone unsuspecting.

That tipped the scales. We both reluctantly agreed that if we didn’t get back, then either the secret died here with us—as we’d planned—or China had it and the United States didn’t.

“Which still doesn’t seem likely,” said Michele, “because even if someone saw that chip, they couldn’t have had it long enough to make any difference.”

“Anyway, we’re going to get back now,” said Mike. “Why wouldn’t we?”

But by this time, earth was responding to our signal and was sending up the data to reprogram the navigational computer, so that we actually had a good deal of hope that Mike’s statement would come true.

This now meant that the problem wasn’t one of survival, but was back to the danger to earth of bringing Galileo; only now, my inclination was that he had shown his good faith, and we owed it to him to take him with us.

“I don’t think you can make that a consideration, Paul,” said Michele. “I know how you feel about being fair; but we made no promises—”

“All the more reason,” said Mike.

“I know how it looks,” she resumed. “But the fact is, we have to consider whether we’re putting everyone in jeopardy by having him come with us. We can’t let good sportsmanship or something override that.”

We went back and forth, especially Mike and Michele, for a good two hours after this; and Mike behaved admirably, I thought. There were several times when he was about to blow up again, but he restrained himself, because he realized—or had been told by Galileo—that a temper tantrum was guaranteed to tip the scales against him. He wasn’t exactly the voice of sweet calm reason, but he left generalizations about women out of the discussion, which was a step forward.

Finally, I said, “We’re getting nowhere like this. I have to talk to Galileo myself and see what he has to say. Mike, could

you take me to his house?”

“Now wait just a minute!” said Michele. “I suppose you’re not going to be satisfied unless you talk to him; but if you’re going to do it, I at least want to be somewhere where I can hear it.”

“Well, we don’t want to bring him in here, because he’d be drunk and maybe not coherent,” I said.

“Not to mention the fact that I’m not letting him in until I’m absolutely sure we’re bringing him—which I hope will be never. How’d we get him out?”

“Well then, why don’t we all go over to see him?”

“Fine if you want to wait three hours until the next blackout from earth,” she said. “But we can’t go now; we were scheduled to go back to earth in two days, and now that they know we’re in communication again, somebody’s going to have to stay here to be ready to answer transmissions. Besides, the sooner we get this resolved the better.”

“I’m all for that,” said Mike. “Why make a big deal about it? I’ll go get Galileo, and you can talk to him outside, Paul, and Michele can listen in from here. What’s the problem?”

And, of course, this did make sense, with the result that within fifteen minutes or so, Mike came back with Galileo, and I met him outside.

He made part of himself into a hand and extended it to me (a greeting many of the Acosmians adopted, and one Mike had probably told him about). “I want to apologize for my unconscionable behavior in the ship,” he said, again with Mike’s voice, down to the last intonation, including the difference in L’s that Mike had picked up from his parents. It would be impossible here to distinguish which of the two was

talking, since I couldn't see Mike's face clearly in his helmet.

"That's all right," I said.

"The irony is," he replied, "that if I were trying to persuade you to take me with you, I probably made the worst possible impression. I did want to see you again, however, to let you know, first of all, that I was not then really myself, and secondly, to say that the effect wears off after a while, so that if you did take me, you would not have been burdened with the blithering fool that you encountered so inauspiciously."

"I don't quite understand," I said.

"But," came Mike's voice, bewildered—evidently from Mike—"you are coming with us, aren't you?"

"You remember, Mike," said Mike's voice, "that it was your idea that I come; and I agreed only if all of you were in favor of it. In spite of your touching effort to conceal the facts, you made it pellucid that there was not universal enthusiasm at the idea."

"You don't want to come?" said Mike.

"It isn't really a question of what I want," he answered. "If I were to come with you, the real reason I would do so would be because I believed that there would be something I could do to help your people; I have tried to help the people here, and failed miserably. But if in the very beginning, my very presence causes discord, what hope would there be that anything productive could come of my living among you permanently?"

"But they only have objections because they don't know you."

"You don't know me either, Mike. We've been acquainted only a very short time. I might be totally different from what

you think me to be; after all, I am one of the unfortunate people.”

“That unfortunate stuff is a lot of crap!”

“Oh, no, it isn’t. You have to be one of the unfortunate people to know what an appropriate name it is. I’ll concede that I don’t think of myself as evil, which is one of the implications of the name; but I doubt if any evil person really regards himself as evil.

“However, from the point of view of the people here, I certainly am evil, in the only way we can be evil; and I would gladly make everyone else evil, were I but able to accomplish it. It is even evil for me now to entertain the thought of coming with you, since now there is a law against it. But you were so insistent on the myriad ways I could help you, and on how interesting earth was, that I confess I was tempted by the prospect, law or no law. But that doesn’t alter the fact that it is evil.”

“But you yourself said that that command was from the priests, not God.”

“You’ve leaped to a conclusion again, Mike; it’s one of your major faults. I only said that it could have come from the priests, though I had no idea why they would want to give such an order; and when you waxed skeptical, I demonstrated to you how it could have been done. But it may have come from some supernatural agency; I can’t rule that out. My not believing in it doesn’t prove that there is none.

“Nor does it absolve me of evil. Evil is either the willingness to violate some transcendent command, or to go against the laws of society; in either case, what I have done, and intend to continue doing, is evil. And what is relevant to you is the fact

that if I am willing to violate my own society's laws—because I happen to believe that they do not have a transcendent source—then what assurance would you have that I would not be willing to violate your own society's most cherished expectations?

“And from the little I have learned of your society, it seems you take a completely different attitude toward evil from what is found here. Here, the evil person is simply left alone, with the result that, if there is any harm in what he does, he harms no one but himself, and his only punishment is loneliness, which he can remove at any time by repenting. But you people seem to want to take a stand against evil and eradicate it, and the result is a strife and a spreading of evil and discord as you divide into factions for and against those who go contrary to your society, whatever their intentions.

“I know what evil is, you see—from long experience; and I would not wish the evil about me to spread to anyone else, except as I can do it here, by convincing others that what I believe is actually the truth, upon which it becomes a great benefit and not evil at all. But on earth, this does not seem to be a realistic possibility.”

“I think you're being a little too scrupulous,” I broke in. “We recognize that we have bad laws, and some of the people we admire most are precisely the ones who have violated the society's laws and saved the population from oppression by them. We think of evil as doing harm to others, not just violating laws.”

“Well, as to that,” he answered, “I certainly have no intention of harming anyone; and, as I said, from my point of view, the few discoveries I have made by violating my society's rules

have compensated me enough so that I would not change back to the state I was in previously. So if that is what you mean by evil, then perhaps I am not evil after all.

“But this is all semantics. I know that my reason for being tempted to come with you is that Mike has been the only person ever to be willing to listen to me, and this has been a relief to my spirit that can never be imagined by anyone who has not found what he thinks is a truth everyone desperately needs to hear but will not listen to. It made me wonder what it would be like to be among many like him.

“As I say, this I know about myself; but how could you know it? It could just as easily be the case that I am scheming to gain power over you, and the best way I could do so would be to disarm you by acting just as I am now: to be apparently open and frank, willing to help, while warning you of the dangers that would already have occurred to you in my coming in your midst. I would be running the risk that you would not be sympathetic to me and would take what I say at face value; but one who desires anything must take risks, as I know so well.

“Even my telling you this could be part of the scheme, because it sounds as if I am sincere, and it could make you wonder that I would reveal such devious methods to you if I actually had them.

“No, there is no way you could know from speaking to me whether I am interested in manipulating you or am speaking sincerely. *I* know I am sincere, but you can't. And since there is the possibility of my manipulating you, then from your point of view, you should leave me here; and from mine, I would not want to go with you under this cloud. I can wait. Perhaps when you return, we can spend more time together, and you will

then be in a better position to judge whether I would be an asset to you on earth, or only harm.”

He was right, at least theoretically. He *could* be saying all this to convince me of his sincerity and make me eager to take him. Yet this was absurd, really. Why would anyone be *that* devious?

I said, “I don’t think you understand the real situation. There’s probably not going to be another trip back here. As far as your coming to earth, it’s now or never.”

“Well, then, I think I would have to advise you that it be never, regrettable as that might be from my position. I can see that I have inadvertently managed to incline you toward trying to persuade me to come with you; but if I were you, I would not trust me. It is too clear that I would like to go. No, Paul, it is too dangerous; if I am as devious as I might be, then the danger to you if I arrived on earth would be far greater than you could have imagined.”

“Well, we have to be the judge of that,” I said. “You only know of us through Mike.”

“And you seem to have a more commendable sense of prudence. Mike is intrepid, but somewhat rash; he is very easy to persuade. But I don’t seem very successful in persuading you, since I seem to be inclining you in the wrong direction. But I don’t really think you should take me into your consideration at all. Life goes on in any case, and my life from now on will not be any worse than it has been.”

The same voice continued, “And it’s been hell up to now,” and then went on, “That was Mike that said that, not I. If it has been hell, it has been a reasonably comfortable hell. I have no regrets; and I am not at all sure it would be worth the effort

to try to win those of you on earth to my desires—though if I were a certain kind of person, the challenge might be interesting. Of course, the benefits to you might also outweigh the effort to convince you that they were benefits. I don't know. But the question is moot, really."

The longer he talked, the more I saw what a treasure we would be leaving behind. Why would he care about making puppets of us? Just for the challenge?

"Paul," broke in Mike's voice passionately, "you *can't* leave him here. You don't know what his life is like, alone like that, but I've seen it! People go by him as if he doesn't even exist!"

"That isn't quite true, now, Mike. Mike has known me only for a short while, remember. Others don't shun me; I shun them, really, because it pains me when they refuse to listen when I try to tell them something that affects them so closely."

"As to that," I said, "I don't know whether this will help you at all, but St. Peter—you know St. Peter?"

"I think I do. Was he the one we saw you with in the stadium?"

"Yes. Well, just before I saw you in the cabin there, I had come back from the church with him; and he went into that room where you people stop changing—and came out again."

"He did? Did you see him?"

"I was right outside the door when he did it."

"That is very interesting indeed. Did Mike tell you I put an animal in there, and it vanished?"

"Yes, we were going to do it ourselves, but the thing got so scared we couldn't bring ourselves to go through with it. St. Peter told me it wouldn't really prove anything anyway. But then he went in himself."

“I see . . . Well, it was certainly intelligent of you not to take my word for it. I must say he possesses more fortitude than I have; I was afraid to enter to see if the animal was still there. But now that he has done it, I will have to do some checking on my own. You *are* sure that he went in.”

“I didn’t actually see him go in, but I saw him inside, and I saw him come out. He was in there.”

“How long was he inside?”

“It seemed like hours, but it must have been only a few seconds. I was going to go in after him myself, but didn’t get to the door before he came out.”

“Conceivably the process takes time. But if so, I should be able to get out before any harm is done; I can stay near the door. It goes against a great deal that I have discovered so far, but possibly they have been right all along. Unless—but why would you seek to trap me? You realize that if you are lying just to discover my reaction, I might very well kill myself.”

This hadn’t occurred to me. Certainly, his reaction was the one I would expect, though, if he was sincere. “No, I saw him,” I said.

“I can’t understand it. Perhaps I’ll have to give up being unfortunate and try to be happy. Happy? How ironic! How could I be happy, knowing what I know now? It simply cannot be that we are immortal and ought not to study ourselves.

“I must say, Paul, that you have made my future here look bleak. It is not your fault. But now, with all my seeking after the truth, I am confronted with a possibility that seems to contradict everything I have learned; and I doubt whether I could believe we were immortal even if it were proved conclusively. I am unfortunate indeed, it seems. I have spent so long

trying to make others see reason, and it might be that they have not only faith but reason too on their side.

“Well . . . it will be interesting to see what I do with my life from now on.”

“But you don’t have to stay here,” I said. “Even if you’re mistaken on this one point, your knowledge is so much greater than ours, you could still be helpful to us—immensely helpful. Your life can still be full of meaning.”

“Don’t tempt me, Paul. You may have helped me, and perhaps the future is not as dreary as it seems. I might invite others to witness my experiment with that room, and if I die, then they will know that it is the room and not their faith that makes us vanish. If St. Peter could risk death for you, I can risk it for them. And if I fail, and we do not die—well, I will not think of that.”

I knew he’d try; and I knew just as certainly that he’d fail. But all this would be after we got home—without him. But why would we not take him with us? Because he might be trying to dominate us, not to help us. But that was ridiculous. How could it be true? How could I persuade him to come?

“Have you thought,” I said, “that if you do die, you’re taking from them a life of illusion that only makes them happy?”

“I have thought of it. But I have also thought that they are killing themselves in ignorance. Which is worse?”

“I don’t know. But what I do know is that we can use you on earth, if you’d only be willing to come with us. You can give these people only a questionable benefit, which they don’t want. But we can change our minds, at least, and—”

“Oh, no, Paul,” came Michele’s voice. “I thought for a minute he’d gone too far at

the end there, and you saw through him. And you would have, if you hadn't known what it was like to grow old on earth, and wait for death. His idea was to show you how noble he was to sacrifice himself for everyone, and at the same time make you think it was a futile gesture that would certainly fail when it was too late to bring him back. He runs risks. You might have cared enough for the people here to let him try his little experiment on the chance that he might succeed, and by his death bring others to avoid his fate. If he'd kept talking, you would have seen this; and then he'd have had to do some really fancy persuasion to bring you round again; and then you'd have spotted the serpent's tail. He was lucky."

"What are you talking about?" I said.

"Paul," she answered, "you don't have a suspicious mind. I do. Can't you see, even when I've pointed it out to you, what he's been doing? He's been giving you the facts, and they all point away from taking him; but he's been doing it so 'sincerely' that you've been constantly put into the position of having to make distinctions, and trying to prove to him that things aren't as bad as he makes them out to be.

"And all the time he's been warning you against himself, he's been sticking in little phrases like, 'Of course, I don't actually feel this way, but . . . ' and making you feel like a heel for suspecting him, and always hinting that if you don't take him you *will* be suspecting him of nefarious designs or something. Oh, he's *very* good. He even had me with him for a while. He's so good it scares the life right out of me to think of him getting loose on earth!"

"I don't believe it," I said.

"You are *out of your MIND!*" screamed Mike.

“I am, am I? Well, I took the precaution of making a recording of this little conversation. Just come in and listen to it, now that you know what it’s all about. And while you’re listening, ask yourself two questions: If he’s so anxious for you not to take him, why did he stay on and on when he saw he was persuading you in the opposite direction? He could have left. And if he wants to die for the sake of the people, why didn’t he do it years ago? Nothing you found out changes that.”

“You’re crazy!” said Mike. “Don’t listen to her, Paul! She’s so full of prejudice that she’d twist anything anybody could say. ~~She—~~ Be quiet, Mike. Nothing good ever came of losing control. I think you should do as she says, Paul. But let me just give you an answer to her questions—not for the sake of convincing you, but just to explain myself. I have been at fault; I confess it. I didn’t go when I saw you inclined to take me, because I would like very much to go with you, in spite of everything. And I never tried the ‘little experiment’ before because I am afraid to die. I still am. But now what do I have to live for?”

“Maybe a lot,” I said. “We’ll have to see. Would you wait out here for us?” Mike and I swam toward the hatch, which Michele had already opened into the airlock. We entered, and were about to swing the door shut, when we noticed Galileo right behind us. Mike held the door open for a minute. “Do you think, if I came—” ~~you think, if I came—~~ “You’re not getting into this ship!” came Michele’s voice, and the door slammed.

“My hand!” screamed Mike. “My hand! Oh, God, Michele! My hand!”

“Open the door!” I shrieked. “Mike’s hand is caught in the door!”

Twenty-Four

The door swung open again, and Mike took his hand out. He was beyond screaming now, and just looked straight ahead for a second, and fainted. I caught him as he went down, and yelled to Michele, “Okay, close the door and get air in here as fast as you can!” I tried gently to work him, cumbersome in his space suit, into a position where I could carry him through the inner door to his mattress. Fortunately, he weighed almost nothing, but the space suit was all over the place as he hung from my arms. I reached over and lifted his right hand and put it on top of his breast, trying to jar it as little as possible; and I cursed the slowness of the process of removing the hydrogen from this little chamber.

“Michi, radio earth that we’re going to have to leave right away. His hand is definitely crushed, and we’ll have to get him to a doctor or he might lose it. Tell them to find the nearest minute we can leave.”

And that would take a half hour—and were we on the edge of a blackout? It would be lovely to have to wait five hours now. I wanted to look at my watch, while I held him and waited for the inner door to open, but of course it was on my

wrist, under him. Well, my knowing what the time was wouldn't make it any different.

The worst part of an emergency wasn't the emergency itself, it was the fact that you usually had to spend most of your time waiting instead of doing anything about it.

Finally, the door swung open, and I said, "Okay, I've got him; just stay back and I'll carry him through." This wasn't as easy as it had been with Michele; she was much smaller, and I wasn't so concerned about not jarring her.

We barely made it; and then I carried him over to his mattress and laid him gently on it, almost in a sitting position because of the oxygen pack and the propulsion system on his back. I propped him up a bit more and Michele took them off, a look of great concern on her face, and got the helmet off so he could breathe. We then laid him back down.

"Should we cut the suit off?" she said. "It's going to be hell to try to pull him out of it."

"Too tough. We'd be a week doing it. It's only his hand, and he's unconscious now, so let's undress him."

We unzipped the suit and slid him as well as we could out of it. His sleeve was already full of blood.

When she finally got a look at his hand, Michele said, "It's not as bad as I thought from all the blood that was there. I can stop the bleeding." She was suiting the action to the word. "But his fingers are a mess; I don't know how many bones are broken. I'll have to feel my way and try to put the pieces back together again, and hope it'll knit back; we can't wait for someone who knows what he's doing. Thank God he's unconscious. Listen: You go back down and tell earth exactly what I'm doing—I'll shout it down to you—and ask if there's

anything else.”

As I was descending the hatch to the space craft, I heard her say softly, “Oh, God, Mike, I’m so sorry!”

As soon as I got down into the space craft, I realized we wouldn’t be able to leave Mike up there in the first stage, in case the force of our takeoff separated us. And if he was going to be brought down, it had better be right away, while he was still unconscious. I called this up to Michele, and she agreed; and so I carried him down and laid him in his seat, which probably would be more comfortable than the mattress anyway. At least we’d be ready to leave as soon as the word came.

Michele didn’t have much room down here, but sitting on the edge of my seat, which was in the middle, she managed fairly well. Meanwhile, I was radioing instructions, and waiting impatiently for the half hour to go by to hear from earth. I looked at the clock. Twenty minutes left of communication time. We should begin hearing in ten minutes, so that left us ten minutes of instructions before everything stopped. If they knew this too—as they did—that should be enough.

Suddenly, Mike said, “What has happened?”

We looked at him. He was still unconscious. Bewildered, we glanced at each other, and then both realized at the same time that it was Galileo’s voice coming over the speaker. He was at one of the windows, looking in.

“Mike’s been hurt,” I said. “The door of the airlock closed on his hand. It’s been broken.”

“Broken?” he said. “Of course! It never occurred to me that you could be injured. Will he die?”

“We hope not. We don’t think so. Michele knows a little about this, and we’re getting advice from earth. But we don’t

have the equipment to do a good job, so we're going back to earth right away."

"May I come in?"

Michele looked up, and I said, "No, Galileo; I'm sorry, but we're busy. You'd be in the way."

"I might be able to help."

"You'll help most by not distracting us. We're expecting word from earth." And at that moment, Jonathan's voice came over the speaker, telling us that we were still in a launch window for an hour, but that he had only a few minutes left, so we'd have to get everything down right now.

The first thing he did was tell how to handle Mike, which turned out to be mostly what Michele had already done anyway, and then said, "All right; here are the parameters for the launch. I'm assuming that it'll be within the next fifteen to twenty minutes after you get this. The numbers'll be valid for plus or minus an hour, and we can catch you when you come round again after you take off. If it's any more than this, wait until we get into communication again. We'll work out an acceleration plan that could get you back here in three days. Here goes."

I fed the numbers directly into the navigational computer, which left me free to radio back to him that I'd heard him, and that we should be leaving well within the hour and twenty minutes we had to do it in.

As I was finishing this, I heard him say, "Well, that's all for the next five hours. I hope you'll be on your way home when I talk to you again. Good luck." Something else, probably that they were praying for us, faded out.

"What'd he say about when we could leave?" asked Michele.

She had been concentrating on working on Mike's hand. I told her.

"The sooner the better," she remarked.

"I'd better program in an hour from now," I said. "I don't see how we could get all the preparations made in less time, especially if you're not available." I was already making calculations and plugging in numbers as the screen display started asking questions. The whole pre-launch check list would be coming up soon.

"I'll be able to help in a minute; I've done all I can for him for now. I think his three middle fingers will be all right, but I don't know about the thumb and little finger; the bones there seem all pieces. They'll probably have to be amputated. Thank God he's left-handed. Now. What should I be doing?"

I told her, and we began the lengthy process of checking things out.

"May I talk now?" came Mike's voice from Galileo.

"What do you want?" I said.

"How is Mike?"

"Still unconscious. He's in bad shape."

"Will you be leaving soon?"

"In about an hour."

"Take me with you."

Michele looked over at me, and I said, "Galileo, Mike's being injured changes things. The two of us are going to have to do the work of three going back, and take care of him too. I don't see how we could take you under the circumstances."

"I could help you. I can learn to do those things very quickly."

"You probably can," I answered, "but our minds are going

to be so occupied with just flying this thing and with Mike that we wouldn't be able to handle having something else to worry about. I'm sorry, but no."

"Paul," he said, "you have destroyed my whole reason for living here. Mike introduced me to oxygen, and I want it—I need it. And suppose it is true that I can't die, am I to go on existing on this planet forever, useless, when I know that there is a place that can profit by my knowledge? It would be worse than killing me. You would be condemning me to an eternity of despair."

"I'm really sorry, Galileo. I really am. But you know that Michele doesn't want you to come, and we just can't afford to have dissension here on the way back. We're so far away from earth that the least mistake would mean we'd never get back, and that will require all our concentration."

"I told you he had no intention of performing his little experiment," said Michele to me. "All he really cares about is oxygen."

"What did she say?" said Galileo. He could see that she was speaking, but couldn't distinguish the words.

"She said she agrees with me."

"Then you will not let me in."

"I'm afraid not. I'm sorry."

"Then *I* am sorry, but I will not give up. I am not very good at obeying orders, Paul."

"You can say that, but you won't get in here unless we let you in, and we're not going to."

"I won't try to break in. But I think—" he came over to the ship, and we heard the click of his body touching it. "Yes, I thought as much. I can attach myself to the ship, and ride there

on the outside. It will probably kill me, but death would be better than staying here. You understand, Paul, that I bear you no malice, and appreciate your dilemma. But on the chance that you and St. Peter are correct, and that I cannot die, then I will be the first to greet you when you emerge on earth; and afterwards you will be grateful that I chose to accompany you.”

“Can he do it?” whispered Michele.

“How should I know?”

“Don’t be afraid that I will slide off when you accelerate,” he said. “I will attach myself to the front of the ship, and then the force of the acceleration will serve to keep me on. Well, Paul, I hope you and St. Peter were right; I have no desire to die. If you were, then I’ll be seeing you, as Mike would say. I hope you harbor no resentment against me for this; but if you do, and I survive this ordeal, I suspect that I will be able to tolerate it. I have already lowered myself so far as to reason with you and even plead with you. It should serve me as good practice for my stay on earth; I learn quickly. Tell Mike that I hope he recovers, and that I hope to see him soon. Now, you have things to do to prepare for our journey, so I will leave you alone.” And he vanished upwards, and we heard a faint click from the top of the first stage.

“What do we do now?” asked Michele. “We can’t go with him on there.”

“What are we supposed to do? Stay here and die?”

“If it comes to that. You heard him. Would you wish him on earth?”

“ . . . I suppose you’re right.”

“Is St. Peter around?”

“He might be. St. Peter!” I called over the microphone.

“Can you hear me?”

“I am here, Paul. Galileo is on the top of your ship, did you know?”

“I know. That’s the problem. Mike got his hand hurt, and we have to leave for earth right away to get him to a doctor. And Galileo wants to come with us, and we wouldn’t let him in, and so he says he’s attaching himself to the ship and riding with us on the outside. Can you get him off?”

“I can try.” We heard a scuffling up on the first stage, and then a series of blows against it that rocked the whole ship.

“He’s trying his sports rushes,” I said. The blows continued.

“Neither Cleopatra nor I can dislodge him,” said St. Peter, appearing at the window. Cleopatra was with him. “We can barely move him at all. How long can you stay here before you must depart?”

“The computer’s set to go in fifteen minutes. If necessary, we could wait another fifteen, but not much more, and then it’s seventeen hours, which would be really bad for Mike.”

“Thank you for your effort, St. Peter. And Cleopatra.” said Michele. “I want to talk to Paul for a minute so Galileo can’t hear us. Pardon us.”

“I understand,” each of them said.

“Paul, how strong are the welds holding us to the first stage? Would they wreck our skin if we tried to twist ourselves free of it?”

“I see what you’re saying. I can’t imagine they’d do us any real damage. And if they do—well, we die here anyway, because you’re right. We can’t go and bring him with us.”

I switched the microphone back to On and said, “St. Peter, do you think you could make sure that Galileo stayed right

where he is? That he couldn't move back down here?"

"That should be no trouble. I think I see the solution you have in mind. Good luck, Paul, and Michele and Michael, and *bon voyage*." Cleopatra then wished us farewell also.

"Goodbye, St. Peter and Cleopatra," we both said. "We'll always remember you; and say goodbye to Newton and Washington and all the others for us, and explain why we couldn't." The two of them disappeared in the direction of the first stage.

"Let's hope they can hold him," I said, as I shut the hatch closing us off from the first stage. "Get the mass-reducers on this part of the ship ready, Mich, and I'll give a burst of the roll thrusters. As soon as we look like we're free, give us full mass for a second or two."

I gave a burst. There was a wrenching sound.

Suddenly, we began to spin, and Michele deactivated the mass-reducers, and we fell like a plummet. "Turn 'em on again! Quick!" I cried.

Still we were falling; all our momentum had turned now into velocity. "Full thrust!" I said, not realizing that I had the main rocket engine under my control. We fell another dozen kilometers, it seemed, before I realized it and started the engines.

We slowed, stopped, and began to rise. Faster and faster.

"There's the first stage!" Michele cried as we shot past and up through the surface, free and headed for home!

Epilogue

That was two years ago now, as I write this, though I suppose it will be many years before it is published, if ever.

Mike's thumb had to be amputated when we returned, but the doctors said that Michele had done a remarkably good job, and Mike has the use of all his fingers (including the little finger which, however, was somewhat bent), though he hasn't to this point got over a considerable stiffness in the hand.

St. Peter's prediction about Michele's interest in him turning to love seems to have come true, but the incident has created complications between the two of them. On the way back, one day when Michele was asleep, Mike looked over at me and said, "I wish I'd died!"

"What are you saying?" I said. "You're going to be all right, judging by the medical reports we've been getting—practically. The pain's making you depressed, that's all."

"If only it was the pain! She's never looked at me!"

"Michi? She's been doing practically nothing else!"

"Yeah, but now all she can see is my hand. I thought, when she said she didn't care if I was Chinese or Black or what,

remember, that—well. But now the only thing she'll notice about me is what she did to my hand.”

“Don't be ridiculous,” I said, and he said, “Forget it. I'm sorry I opened my mouth,” and lapsed into silence.

As far as I know, he's still convinced of this; and Michele is convinced, from my talking to her, that Mike hates her for refusing to bring Galileo back with us. “I know he realizes what I did to his hand was an accident,” she said. “But I can tell from the way he looks at me that he feels that if I hadn't been so set on keeping him up there, all this wouldn't have happened.”

They say these things straighten themselves out in time, but I don't know—especially in Mike's case. He is so ready to think that people don't like him that it will take more than words to convince him that Michele really cares for him; and unfortunately her perception of him makes her act just the way that confirms him in his view.

Well, it's for them to work out, I suppose. I don't see that I can be of any help. All we can do is wait.

What really concerns me is Galileo, up there on Jupiter, with the first stage of our rocket and all the literature and scientific works we've sent up from earth.

Probably what he'll do—for a while, at least—is find a way into the oxygen tank and go on a binge. I don't agree with Michele that that was his only real reason for wanting to come, but it must have been a strong one. But then, what happens when the oxygen begins to run short—or when he realizes that if he doesn't do something, he'll run out of it? Will he have enough information and ability to use the first stage to get down here to us—or perhaps build something there on Jupiter

that will do the same thing?

I've talked about it to Mike, now that he's more or less rational on the subject, and he said that in some ways Galileo is very lazy, and he might just find it too much trouble. But he goes after what he really wants. So here too, all we can do is wait.